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Roles of field level agricultural extension workers in Nepal as perceived by agricultural extension personnel

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Roles of field level agricultural extension workers in Nepal as perceived by agricultural extension personnel

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I. INTRODUCTION

Roles of JTAs

The focus of this study was to determine the perceptions of agricultural extension personnel regarding the importance of roles of Junior Technical Assistants (JTAs) and performance of those roles.

JTAs are the agricultural extension workers at the field level in the agricultural extension system of Nepal. As field level extension workers, they introduce new ideas and practices to farmers and address their needs for improved farming. Their efforts and activities influence the process of modernizing agriculture and thereby increase farm productivity to a large extent.

Like field level agricultural extension workers in other parts of the world, JTAs have several roles to perform. Specifically, in the case of Nepal, JTAs are expected to perform the following roles:

1. Program determination: Since JTAs live in the rural communities and work with the local clientele, they know the needs of the clientele. From their first-hand experience with the needs of the clientele, they can establish program priorities more effectively.
2. Program strategy: Even the best intended extension programs might fail if the programs lack strategy. The first-hand experience of JTAs with the clientele and the local situations can be utilized to formulate extension strategy. The role of JTAs in making the extension programs work effectively does not need exaggeration.

3. Program implementation: One of the major responsibilities of JTAs is, of course, implementation of plans and programs of the Ministry of Agriculture at the field level.
4. Education: JTAs, like other field level extension workers, are the agents of change. They introduce new ideas and practices to their clientele through various appropriate teaching methods and communication channels.
5. Program evaluation: JTAs should be responsible for not only planning and implementing programs, but also for assessing the impact of the programs. They should also evaluate the process of changes that are taking place in their localities.
6. Special programs for female farmers: Another role of JTAs concerns meeting the special needs of female farmers. In Nepal, women contribute significantly to the farm labor force and to farming decisions (Shrestha et al., 1984; Sharma, 1984; Axinn, 1984). The needs of these female farmers demand special attention from JTAs.
7. Special programs for rural youth: The youth of today will be the farmers of tomorrow; addressing their needs by JTAs will help them become not only productive farmers but also good citizens.
8. Professional development: JTAs cannot fulfill their roles if they cannot become competent extension workers. Therefore, it is their professional responsibility to keep themselves up-to-date and to meet high professional standards.

Thus, JTAs have several diverse roles, and each role requires them to perform numerous tasks. For instance, the program strategy role requires them to perform tasks such as: (1) utilizing a calendar of operation, (2) consulting with ADOs on program direction, (3) becoming acquainted with influential clients, (4) developing working relationships with farmers, (5) using principles of motivation in extension work, and (6) reporting activities and progress periodically to supervisors. The program implementation role requires them to perform tasks such as: (1) selecting progressive farmers for trials and demonstration, (2) encouraging farmers to try new ideas, (3) developing farmers' problem-solving skills, (4) promoting programs to increase production of major crops, and (5) introducing new crops.

Are all the tasks to be carried out by JTAs important? What tasks are critical under given circumstances, and do these critical tasks have priority? Is there congruence between the degree of importance of tasks and the level of performance of those tasks? How do different groups of extension personnel in the country perceive the importance and performance of those tasks?

Before further analyzing these problems, some background information on the present study will be provided in this chapter. Because a person's work environment affects his/her performance, a brief explanation of the JTAs' work environment will be presented. In addition, the historical development of the agricultural extension service in Nepal, the present organizational structure of the agricultural extension, the current

agricultural extension systems, and the preservice education of JTAs will be briefly described to aid in understanding the research problem at hand.

The Work Environment of JTAs

The work environment of JTAs, which directly affects their roles and performance, is complex. Extreme geoecological conditions, a large number of clientele with diverse socioeconomic backgrounds, inadequate support services for activities, the low capacity as extension workers, and low motivation to work--all contribute to the complexity of the work environment, which in turn affects JTAs' roles and performance.

Nepal exhibits extreme geoecological diversity within a small geographical area. The country's geoecological condition varies so sharply that it ranges from a subtropical climate in the plain of Terai to a temperate climate in the Himalayas, as the altitude changes from nearly 400 feet in the south to 29,002 feet in the north within a distance of 100-150 miles. This geoecological diversity has contributed to the adaptation of diverse flora and fauna and various socioeconomic groups of people in the country. JTAs need to be knowledgeable not only about the various plants, crops, and animals raised in different geoecological regions, but also about the various socioeconomic backgrounds of the people.

The clientele of JTAs represent diverse socioeconomic backgrounds. They differ among themselves not only in age, gender, land ownership, and social status but also in castes and ethnicity, with their unique traditions, values, and beliefs.

Chamber's (1983) description of the condition of rural poor in developing countries could also apply to the majority of JTAs' clientele: they are generally poor, powerless, physically weak, isolated, and vulnerable. The clientele live in one of the poorest countries (Livingston and Holt, 1985), and make their living by subsistence farming. They own small pieces of land and cultivate intensively in order to produce enough to feed themselves. Subsistence living requires them to grow as many kinds of crops as possible and raise several kinds of farm animals. They work hard trying to produce maximum amounts, but still follow the traditional practices of farming and raising animals, which, of course, does not prove to be efficient or productive. Most farmers do not adopt recommended improved practices because improved practices generally involve some initial cost which they cannot afford.

JTAs need to work closely with farmers to maximize the effectiveness of extension. However, due to the shortage of qualified extension workers at the field level, a JTA may be assigned to serve as many as 2500 families (Bajracharya, 1985; ADB/HMG, 1982). Consequently, their services are generally limited to influential clientele. Paradoxically, those who need the most help from the JTAs, such as the small farmers and the women, receive the least (Pradhan and Shrestha, 1984; Sharma, 1984; Ranjitkar, 1984).

A requirement to spend a considerable amount of time in administrative functions (Bajracharya, 1985; Sinha, 1985) also limits the JTAs' technical activities as well as the number of clients served.

On the one hand, JTAs are required to cover a large area or serve a large number of clients, and on the other hand, they lack facilities to effectively reach them. JTAs have neither transportation means nor effective teaching materials to serve the large number of clients. A major portion of the clientele cannot read and write, and, therefore, would not understand messages in extension publications. Farm visits, demonstrations, farmers' tours, exhibitions, and field days might be more appropriate ways and means to reach the clientele, but there are certain limitations in their uses. The agricultural program of Radio Nepal should serve as a major channel, but lack of access to radio receivers, as well as the difficulties in broadcasting specific information relevant to all particular locations, have limited the use of radio messages.

JTAs themselves live and work in isolation due to difficulties with transportation and the lack of modern communication facilities. The district headquarters, where they may seek advice and technical support, are not easily accessible. Remote locations also make it difficult for their supervisors to provide regular supervision and support. Especially in districts under conventional systems of extension, the only time JTAs are in touch with their supervisors is during monthly meetings in the district office.

The low capacity of JTAs as extension workers also affects their roles and performance. Many of the JTAs are young, inexperienced, and inadequately prepared to perform their roles effectively. A large number of JTAs are only high school graduates. Others have an additional year of training in agriculture. A regular inservice training could help them to

be more able extension workers, but such a training program is yet to be instituted beyond the Training and Visit system of extension.

JTAs live and work in the rural communities, in most cases in remote, difficult locations of the country and far away from home, where they do not have proper housing and office facilities. A lack of physical facilities such as housing, office, and transportation contributes to low motivation to work, which, in turn, affects roles and their performance.

Historical Overview of Agricultural Extension in Nepal

Agricultural extension service was introduced to Nepal with the initiation of rural development programs. In 1952, when the Tribhuvan Village Development Program was implemented, extension workers known as Village Level Workers (VLW) were employed to carry out various rural development activities including agricultural extension at the field level. Towards the end of the decade, agricultural extension was given a high priority. As a consequence, in 1959, an extension section was established in the Department of Agriculture to plan and execute the extension programs on a larger scale. Following this change, the Village Level Workers were redesignated as Junior Technical Assistants (JTAs).

Major revisions of the organizational structure of the agricultural extension service took place in 1966 and 1973. In 1966, the extension service was reorganized as a separate department directly under the Ministry of Agriculture. In 1973, the Department of Agricultural Extension was amalgamated with other departments to form a single department--the Department of Agriculture. At this time, extension

directorates were also established at the regional headquarters in order to effectively oversee the extension programs in the respective regions.

Besides developing an appropriate organizational structure for the extension service, the Department of Agriculture was also making an effort to institutionalize training for JTAs. Accordingly, the School of Agriculture was established in the Department of Agriculture in 1957 to conduct formal training for JTAs. In 1968, the school was upgraded to college status; it then began to offer a preservice agricultural education program at the intermediate level. In 1973, the college was brought under the administrative umbrella of Tribhuvan University, where it was renamed the Institute of Agriculture and Animal Science (IAAS).

The Present Organizational Structure of Agricultural Extension

The Director General of the Department of Agriculture has the overall responsibility for executing extension programs in the country. He is assisted by the Deputy Director General of Extension. Three units within the Department of Agriculture, as shown in Figure 1, facilitate the implementation of extension programs: The Agricultural Extension and Training Section coordinates training in different locations; the Agricultural Information Section produces various printed materials and presents the radio agricultural program; and the Rural Youth Section coordinates youth activities. The country is administratively divided into five developmental regions and 75 districts. At the regional level, the extension program is administered by the Regional Director. From nine

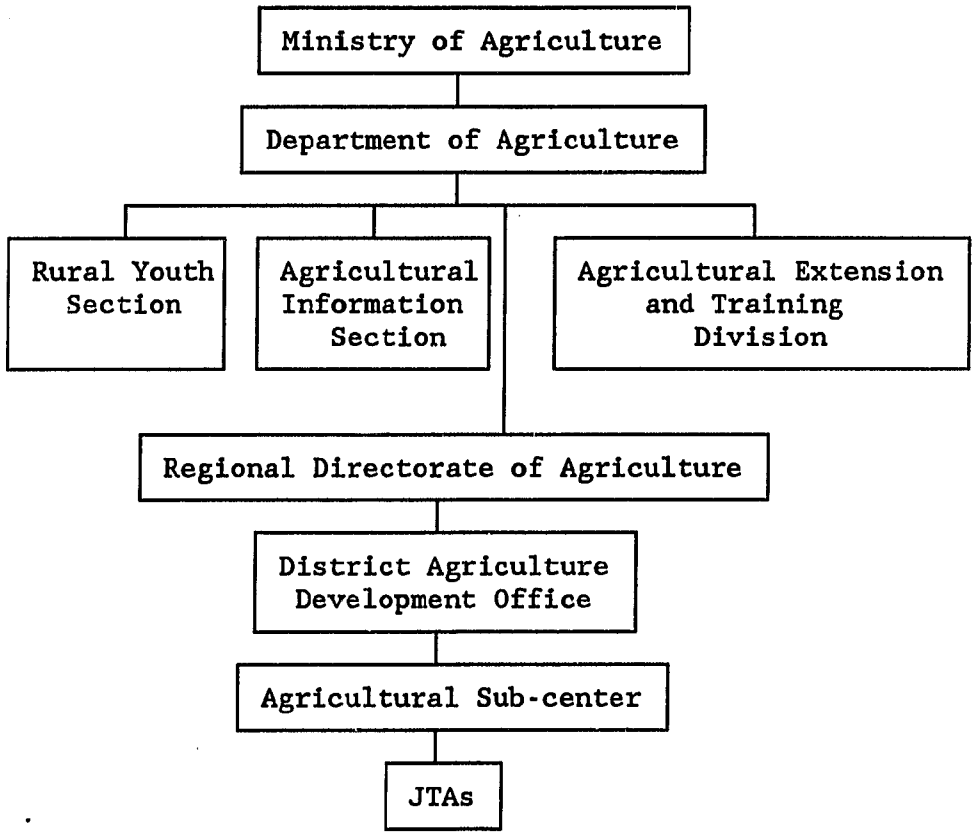

Figure 1. The organizational structure of agriculture extension in Nepal

to nineteen districts fall under the supervision of each regional director. At the district level, the extension program is carried out by the Agricultural Development Officer (ADO). He is supported in the implementation of the programs by a number of technical and administrative personnel.

Each district is again divided into administrative units called Village Panchayats, which are grouped into 4-6 sub-centers. A Junior Technician (JT), who is in charge of the sub-center, supervises the activities of 3-5 JTAs working in the Village Panchayats. The JTs also work directly with the farmers. In the Training and Visit system, the JTA in turn guides 1-3 Panchayat Level Agricultural Assistants (PLAAs) in addition to working closely with farmers. On an average, each JTA serves 2500 farm families (ADB/HMG, 1982; Bajracharya, 1985).

PLAAs are full-time extension paraprofessionals selected from farmers in the area. They receive a short training in extension methods at the beginning of their appointment and later attend regular fortnightly trainings in various subject matters of agriculture. After each fortnightly training session, the PLAAs are required to visit the contact farmers and discuss the technical recommendations obtained during the training. Each Panchayat has one PLAA to work with 90 contact farmers who in turn are expected to influence approximately 700 farm families.

JTAs, in conventional extension systems, get some support for their activities from Agricultural Assistants, who are essentially cooperative, progressive farmers. Each Panchayat has one Agricultural Assistant. These assistants receive some monetary incentive for their services.

The Current Agricultural Extension Systems

The World Bank and other international agencies have provided some fundings for the extension service in some parts of the country. Therefore, different models of extension service according to the nature and source of fundings have been adopted in the country and are briefly described below.

The Conventional system

This system, which has its roots in diffusion theory (APROSC, 1988), was followed when extension programs were systematically organized for the first time in 1959 and covers most of the districts in the mountain region.

In this system, JTAs use various communication methods such as personal visits, demonstrations, printed materials, and farmers' tours and meetings to disseminate messages on improved practices. JTAs attend monthly or bi-monthly meetings at the ADO office in the district headquarters where they discuss administrative and technical difficulties in the field. This system differs from the Training and Visit approach in several aspects. One of the major differences is that, unlike the Training and Visit system, the Conventional system lacks direct linkage with the research. Other differences may be the lack of regular training of grass-roots level extension personnel and fewer physical and human resources in the Conventional system.

The Training and Visit system

The Training and Visit system of agricultural extension was first introduced in 1975 in three districts of Terai, under a World Bank funded irrigation project. The system was extended to other irrigation project districts in subsequent years. Because of better results with the Training and Visit approach, the World Bank and the UNDP provided further assistance to implement this system of extension in eight additional Terai districts under the Agricultural Extension and Research Project (AERP). The remaining six Terai districts adopted this system in 1985 under the second phase of the AERP.

The Training and Visit system of extension has been adopted in all the Terai districts plus four mountain districts. The Training and Visit system has not been adopted in other mountain districts because of the high cost and difficulties in its implementation and supervision.

Fortnightly training of PLAAs, scheduled visits to contact farmers, and a direct linkage with the research are the main features of the Training and Visit system.

The Tuki system

This system of extension came into operation in two hill districts, Sindhupalchowk and Dolakha in the Central Development Region, in 1977, along with the initiation of the Swiss government assisted Integrated Hill Development Project (IHDP). The system is named after its extension workers at the field level. Tuki, which means traditional "Oil Lamp," are multipurpose volunteer extension workers selected from farmers in the area. They are given 15 days initial training and two days of refresher

training four times a year in various aspects of agricultural and rural development. The Tukis, through whom some farm inputs are made available to farmers in the community, are expected to be role models for their fellow farmers. Some commission from the sale of the farm inputs is given to them as incentive for their work. The Tukis often serve as helping hands for JTAs.

The Farming System Research and Extension system

Lumle Agriculture Center, established in 1968, provides extension services to the farmers of 27 Village Panchayats in three hill districts of the Western Development Region, Kaski, Parbat, and Myagdi. In recent years, the Center has emphasized the Farming System Research and Extension (FSRE) approach to reach and serve the farmers (APROSC, 1988).

The Overseas Development Administration (ODA) of the United Kingdom provides financial assistance for the activities of Lumle Agriculture Center in order to help the retired Gurkha army personnel.

The Integrated Rural Development Project (IRDP) system

Several Integrated Rural Development Projects (IRDP), operating in various districts of the country, have extension components in their programs. Accordingly, the IRDPs facilitate the existing extension services of the districts by providing additional physical and technical resources. As such, the IRDPs do not have their own organizational set-up for extension purposes.

The Block Production Program system

The Block Production Program, operating since 1982, is the latest introduction of technology dissemination processes in Nepal. In this approach, all multidisciplinary efforts are concentrated within a specified block of farms which comprise 25-100 hectares in total.

The Block Production Program emphasizes input management and serves as a demonstration of the impact of improved technology in agriculture. Farmers' field days and farmers' tours are conducted in the production blocks. At present, twelve districts have Block Production Programs of various sizes.

In summary, the Training and Visit and Conventional systems of extension are the two major approaches of extension service. The other approaches briefly described above are being implemented under various projects on relatively small scales and have some distinguishing characteristics. However, none of them function independently of the other two major approaches. Also, regardless of which approaches are in practice, each district has an Agriculture Development Office with JTs and JTAs as field level workers, and the Department of Agriculture has the overall responsibility for extension service.

The Preservice Education of JTAs

Preservice education for JTAs is offered through two branch campuses of the Institute of Agriculture and Animal Science (IAAS), the Lamjung and the Paklihawa. The Lamjung campus is located on the high mountain area, whereas the Paklihawa campus is located in the Terai.

Until 1985, the preservice education at the middle level had two objectives. These objectives were to prepare students for admission to higher studies in agriculture and to produce Junior Technical Assistants (JTAs) with a one-year program and Junior Technicians (JTs) with a two-year program. JTs were also employed as extension agents at the field level, but they were not found to be superior to JTAs in their field performance.

A shortage of JTAs occurred in the Ministry of Agriculture because most of the JTAs pursued higher studies instead of joining the various departments and agencies of the ministry as originally planned. A study conducted in 1981 provided a basis to project a need for 550 JTAs per year. This projection was far above the regular production of JTAs at IAAS campuses. The gap between the need and supply of JTAs led to the implementation of a six-year project in 1985 to produce the required number of JTAs at IAAS campuses.

Under the new JTA training program, the plant science curriculum was modified and improved, and a separate curriculum in animal science introduced. The new plant science curriculum consists of revised courses in agronomy, horticulture, soil science, plant protection, animal science, farm management, and agricultural extension.

The new curriculum is also one year in duration, but the program has been made terminal. This means JTAs are no longer eligible to continue studies for higher degrees. This provision was made to ensure a regular supply of JTAs for the Ministry of Agriculture. In the revised training program, the curriculum for JT training was terminated.

Besides IAAS, some trade schools have begun offering a curriculum to produce middle level technicians in agriculture. Five out of seven trade schools offer a three-year curriculum to seventh grade students who exhibit potential to be JTAs (Green, Khadka, and Meaders, 1987). These trade schools, which have a capacity to produce over 150 technicians per year, have emphasized practical aspects of agriculture in their curriculum.

High school graduates with agricultural majors have also been employed as JTAs. Although they were not specifically prepared for an extension job, they were employed due to a shortage of qualified JTAs.

Statement of the Problem

JTAs occupy an important position in the agricultural extension system of Nepal. As field level agricultural extension workers in the technology dissemination process, they have various roles to perform. However, the roles and responsibilities expected of JTAs as field level agricultural extension workers are not clear and specific (Green et al., 1987; Pradhan et al., 1985; Sinha, 1985; APROSC, 1985). Roles of JTAs need to be specified and defined in order to perform these roles according to their importance and priorities.

Purpose and Objectives of the Study

The overall purpose of this study was to investigate the perceptions of different groups of agricultural extension personnel for the importance

of JTAs' roles and the performance of those roles in order to develop a job description for JTAs. The specific objectives of the study were:

1. To establish demographic characteristics of extension personnel.
2. To determine the perceptions of JTAs, ADOs, and administrators for the importance and performance of tasks of JTAs.
3. To determine if there is a significant difference in the perceptions of JTAs, ADOs, and administrators for the importance and performance of JTAs' roles.
4. To determine if there is a significant difference in the perceptions of JTAs and ADOs in the two geographic regions for the importance and performance of JTAs' roles.
5. To determine if there is a significant difference in the perceptions of ADOs in the five developmental regions for the importance and performance of JTAs' roles.
6. To determine if there is a significant difference in the perceptions of JTAs in the five developmental regions for the importance and performance of JTAs' roles.
7. To determine if there is a significant difference between the importance and the performance of JTAs' roles as perceived by JTAs, ADOs, and the administrators.
8. To determine if there is a significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the two geographic regions.

9. To determine if there is a significant difference between the importance and the performance of JTAs' roles as perceived by ADOs in the five developmental regions.
10. To determine if there is a significant difference between the importance and the performance of JTAs' roles as perceived by JTAs in the five developmental regions.

Hypotheses

The null hypotheses tested in this study were stated as follows:

HO 1: There is no significant difference in the perceptions of JTAs, ADOs, and the administrators for the importance and performance of JTAs' roles.

HO 2: There is no significant difference in the perceptions of JTAs and ADOs in the two geographic regions for the importance and performance of JTAs' roles.

HO 3: There is no significant difference in the perceptions of ADOs in the five developmental regions for the importance and performance of JTAs' roles.

HO 4: There is no significant difference in the perceptions of JTAs in the five developmental regions for the importance and performance of JTAs' roles.

HO 5: There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs, ADOs, and the administrators.

HO 6: There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the two geographic regions.

HO 7: There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the five developmental regions.

Significance of the Study

1. Results of the study should contribute to a well-defined job description for JTAs.
2. Results of the study should contribute to the development of uniform role expectations for JTAs among various groups of extension personnel, thereby avoiding a role conflict situation and increasing the level of performance of JTAs.
3. Defining what is expected of JTAs will help in reviewing preservice and inservice educational programs.
4. Descriptions of the roles and tasks to be performed by the JTAs will provide a basis for identifying the competencies required by JTAs.
5. Results of the study will be of value in determining the minimal qualifications for JTAs.
6. Results of the study will provide a basis for formulating policies concerning the professional growth of JTAs.

Assumptions and Limitations of the Study

1. The study was limited to the importance and performance of roles of JTAs employed by the Department of Agriculture as perceived by various groups of agricultural extension personnel. The importance and the performance of roles of JTAs employed in the Department of Livestock Development and Animal Health was not studied.
2. The study was limited to perceptions of roles regarding agriculture (crops, soils, etc.). The study did not include perceptions relating to animals, forestry, or natural resources.
3. JTs carry out functions similar to those of JTAs. It was assumed that the result of the study could be used in defining roles of JTs as well.

Definitions of Terms

1. Agricultural Development Officer (ADO): The agricultural extension worker at the district level responsible for the execution of extension programs in the district and the supervision of JTAs.
2. Administrators: Agricultural extension personnel at the top of the organizational hierarchy that include officers in the regional, departmental, and ministry level.
3. Developmental regions: Refers to the five regions categorized by the government for the purpose of balanced regional development.

4. Extension personnel: Refers to the technical employee of the Ministry of Agriculture at all levels of hierarchy responsible for the implementation of agricultural extension programs.
5. Geographic regions: The mountain and the Terai regions of the country.
6. Junior Technical Assistants (JTAs): Agricultural extension workers at the field level employed by the Department of Agriculture.
7. Role: Major part of a position that indicates what a JTA does.
8. Tasks: Major part of a role and tells how the JTA fulfills the role. These are the activities to be carried out by JTAs.

Summary

JTAs, the agricultural extension workers at the field level, hold an important position in the technology transfer process in agriculture in Nepal. However, the roles expected from them in this process do not appear to be specific and clear. This study was designed to investigate the importance of JTAs' roles and performance of those roles as perceived by different groups of extension personnel, and to develop a comprehensive job description for JTAs.

Some background information on the JTAs' work environment, the history of the extension service in Nepal, the present organizational structure of the extension service, extension approaches currently in practice, and the curriculum for JTA preparation were also briefly discussed to aid in understanding the research problem.

CHAPTER II. LITERATURE REVIEW

The concepts of "role" and "performance" are integral parts of this study. Existing literature concerning these concepts was searched in order to develop a conceptual framework for the study. Special attention was given to role theory, change agent role, and role performance. Several concepts of contemporary role theory are discussed first.

Role Theory Defined

Biddle (1986, p. 71) stated that "Role theory concerns one of the most important features of social life, characteristic behavior patterns or roles. It explains roles by presuming that persons are members of social positions and hold expectations for their own behaviors and those of other persons." Rogers et al. (1988, p. 71) also referred to role as "...a set of socially defined expectations about the beliefs, values, attitudes, and behavioral norms associated with a distinctive status." According to Wexley and Yukl (1984, p. 142):

> A role is the set of behaviors expected of a person who occupies a particular position in a group or organization. Specific "role expectations" are communicated to a person by other members ("role senders") with whom the person has important relationships. Role expectations are also derived from the obvious requirements of the task itself and from written job descriptions, rules, and standards.

The term "role" within an organizational context was defined by Van Sell et al. (1981, p. 43) as "...a set of expectations applied to the incumbent of a particular position by the incumbent and by role senders within and beyond an organization's boundaries." Newcomb (1951) stressed

that role and position are inseparable in that a position is meaningless without its accompanying role. Each position has its role and each role has its position. Any role carries meaning only upon shared understanding, and that role may be visualized as being at the center of a network of roles. After reviewing, Smith (1978, p. 28) had the following to say about the role in relevance to organizations:

> ...Roles may be learned through indoctrination, observation, and interaction. The learning of these roles is influenced by a person's environment and experiences. The importance of professional positions in educational organizations is so crucial that special efforts must be made in determining and defining these roles and in helping members of the organization understand and accept the responsibilities associated with them.

Roles of individuals change over time. Bates and Harvey (1975, p. 389) asserted that "roles are not fixed unchanging entities. They are subject to change and adaptation through the very process which produces the behavior of the actor." Knowingly or unknowingly, circumstances make individuals' roles change, as Smith (1978, pp. 28-29) commented:

> The effort to cope with the perceptual changes in technology, in scientific understanding, in material resources, in the capacities of members of the organization, and in the demands of clientele often necessitates changes in organizational objectives. These changes, in turn, imply role changes of these organizational members whose responsibility is to carry out the organizational objectives.

When one finds oneself in a situation requiring a different role than before, a redefinition of the new role is necessary. However, redefinition depends on various factors. Powers (ca. 1988) proposed that:

> The degree to which people are able to redefine their roles is a positive function of the (1) frequency, (2) duration, (3) intensity, and (4) concentration with which

> they are able to utilize learned capacities for (a) reading gestures, (b) role taking, (c) imaginative rehearse, and (d) adjusted response.

Role Conflict

Miles and Perreault (1976) defined role conflict as the degree of incongruity or incompatibility of expectations in the performance of an assigned role by individuals. Role conflict implied an incompatibility between job tasks, resources, rules or policies, and other people (Nicholson and Goh, 1983). It occurred due to two or more incompatible sets of pressures regarding the role occupant's expected behavior (Shamir, 1980). Rogers et al. (1988) asserted that role conflict occurred when an individual occupied two incompatible statuses at the same time. Chances for role conflicts increased as he or she was required to make certain decisions that affect other persons' lives. Wexley and Yukl (1984) also stated that role conflict occurred when (1) two or more role senders communicated incompatible role expectations, (2) a single role sender communicated inconsistent role expectations, and (3) a person held more than one position in the organization. According to Kahan et al. (1964), the nature and structure of an organization influenced role conflict.

Rizzo et al. (1970) considered role conflict in terms of the dimensions of congruency-incongruency or compatibility-incompatibility in the requirements of the role. They asserted that incompatibility or incongruency may produce various types of role conflicts, as listed below:

1. Conflict between the focal person's internal standards or values and the defined role behavior

2. Conflict between the time, resources, or capabilities of the focal person and defined role behavior
3. Conflict between several roles for the same person
4. Conflicting expectations from within as well as outside of the organization.

Besides some general job descriptions for JTAs, there are certainly unexpressed expectations for their behavior and professional conduct from both their supervisors and clientele. The JTAs who possess the boundary roles, meaning those roles that link the organization with its environment through interaction between an organization member and a non-member (Thompson, 1962), have the responsibilities to meet the expectations of clientele in addition to meeting expectations of their supervisors. In such role situations, as Shamir (1980, p. 742) explained:

> Conflict is created by expectations and pressures directed to the role occupant (focal person) not only from intraorganization sources but also from extra-organization sources. This puts the role occupant in a particularly difficult situation both because in the typical case there is a conflict of interests between intra-organization sources and extra-organization sources, and because his ability to control, manipulate expectations and pressures that come from sources outside the organization is in many cases more limited than his ability to control, manipulate, and influence intra-organizational expectations and pressures.

Shamir (1980) reiterated that subordinate service roles were more subjected to conflict than the organizational leadership roles. His argument was that the supervisory role occupants tended to have fewer contacts with outsiders and thus to be less exposed in these contacts, and

to have more control over expectation. He provided four characteristics of subordinate roles that enhance the role conflict situations:

> (1) Their relatively high boundary relevance--operationally defined as the number or frequency of contacts with individuals outside the focal person's organization; (2) their high degree of exposure to role senders outside the organization; (3) their lower status relative to role senders outside the organization; and (4) their low status relative to role senders inside the organization (p. 743).

Shamir's observations were based on subordinate roles in such service-oriented organizations as hotels, restaurants, banks, and transportation. However, Yeshewalul and Griffith (1984) reported similar observations in agricultural extension, which is also a service-oriented organization. According to the results of their study, agricultural extension workers in the United States and Canada perceived more role conflicts with their clientele than with their respective employing organizations.

Extension being a service-oriented organization, JTAs face the dilemma of having two bosses. On the one hand, each of them has an ADO as a supervisor who administers policies, rules, and regulations, or gives verbal instructions and evaluates their work. On the other hand, they have the clientele whose demands have to be fulfilled or expectations met.

Conflicts resulting from expectations of different clientele have other dimensions. JTAs' clientele consist of such diverse groups of people as big farmers, small farmers, female farmers, and rural youth. Each group has its unique needs to be satisfied by JTAs. The more varied the clientele in terms of age, gender, education, and needs, the higher the level of interclientele role conflict can be.

An individual who faces a role conflict situation and still remains in the organization--because there is no other place to go--has the potential to exhibit deviant behavior. Such deviant behavior provides an outlet for expressing conflict with management, which ultimately affects both individual and organizational performance. In this line of observation, Raelin et al. (1985, p. 30) stated that:

> Deviant behaviour can hurt both the individual and the organization. For the individual it is a constant source of strain, because though it is a behavioral outlet for dissatisfaction, it does not resolve the problem....In the meantime the organization retains a disenchanted member whose practice may now be at cross-purposes with organizational objectives.

By pointing out that role conflict is the outcome of two or more incompatible expectations for the behavior of a person, Biddle (1986, p. 73) warned that both the individual and the organization will be disrupted if the individual is subjected to a conflicting pressure:

> Roles...are assumed to be associated with identified social positions and to be generated by normative expectations, but norms may vary among individuals and may reflect both the official demands of the organizations and the pressures of informal groups. Given multiple sources for norms, individuals are often subjected to role conflicts in which they must contend with antithetical norms for their behavior. Such role conflicts produce strain and must be resolved if the individual is to be happy and the organization is to prosper.

Role Ambiguity

Role ambiguity implies a lack of information about the job role for the individual with regard to uncertainty between role requirements and

self. Van Sell et al. (1981, p. 44) viewed that role ambiguity could take one or all of such forms as:

> (a) Information is unclear regarding which potential role expectation--A, B, or C--should be performed; (b) it is understood that expectation A should be met, but information is unclear regarding what behavior will in fact yield A; (c) the consequences of behavior A are unclear.
>
> ...Each of these forms of role ambiguity may exhibit a reciprocal causal relationship with dimensions of role conflict.

Based on the above assumption, the authors suggested that empirical indices of role conflict and role ambiguity are related to some degree even though these two terms are conceptually distinguishable types of role stress.

Wexley and Yukl (1984, p. 142) noted that "if the total set of role expectations does not clearly designate what duties a person is supposed to perform and how the individual should behave, there will be 'role ambiguity.' Role ambiguity may be due either to insufficient role expectations or to inconsistent role expectations." Rizzo et al. (1970, p. 151) had the following to say about role ambiguity:

> ...Every position in a formal organizational structure should have specified set of tasks or position responsibilities. Such specification of duties, or formal definitions of role requirements, is intended to allow management to hold subordinates accountable for specific performance and to provide guidance and direction for subordinates. If an employee does not know what he has the authority to decide, what he is expected to accomplish, and how he will be judged, he will hesitate to make decisions and will have to rely on a trial and error approach in meeting the expectations of his superior (p. 151).

Kahan et al. (1964) argued that role ambiguity results from, among other things, organizational size and complexity, and frequent changes in technology as well as in personnel. The authors found in a study that 35% of the employees in the nationwide sample did not have a clear idea about the scope and responsibilities of their jobs. The results of the study also showed a high degree of role ambiguity associated with increased tension, anxiety, fear, and hostility, decreased job satisfaction, and lack of self-confidence as well as lower productivity. Van Sell et al. (1981, p. 66) conducted an extensive literature review on role conflict and ambiguity and concluded that:

> (1) Role conflict and ambiguity appear to cause lower productivity, tension, dissatisfaction, and psychological withdrawal from the work group.
> (2) Individual differences in perceptions of and adaptability to the work environment as well as the need for clarity are likely moderators of the relationships between role sender-focal person relationships.
> (3) It appears that experienced role conflict and ambiguity are partially a function of a complex interaction of job content, leader behavior and organizational structure.

Role conflict and role ambiguity were investigated by Nicholson and Goh (1983) in relation to structural and interpersonal variables. In a production and manufacturing environment, role conflict was not related to either structural and interpersonal variables. However, it was associated with interpersonal variables in a research and development environment. Regardless of work environment, role ambiguity was associated with structural variables.

Both role conflict and role ambiguity have a great deal of indirect effect on job attitudes besides their direct relation to low levels of job satisfaction. Along this line, Bedeian and Armenakis (1981) investigated the consequences of role conflict and ambiguity on tension, job satisfaction, and propensity to leave an organization using path analysis. Both role conflict and role ambiguity were found to have an even greater effect on satisfaction through their effect on tension.

Bedeian et al. (1983) focused their study on the moderating influences of supervisory interaction, peer group interaction, and organizational work facilitation on three work-related outcomes: job performance, job satisfaction, and expressed intentions to remain with or to leave an organization. The results indicated that:

1. Supervisory interaction moderated relationships between (a) intersender role conflict and job performance, (b) person-role conflict and job satisfaction, and (c) ambiguity concerning behavioral outcomes and propensity to leave.
2. Peer-group interaction positively moderated the relationship of intersender-role conflict with job performance and negatively moderated the relationship of ambiguity concerning behavioral consequences with propensity to leave. However unlike supervisory interaction, peer-group interaction did not moderate the association between person role conflict and job satisfaction.
3. Organizational work facilitation moderated the relationships among intersender-role conflict and the outcome variables, job performance, and propensity to leave. Additionally, it also

moderated the relationships between person-role conflict and job satisfaction and between predictability of behavioral outcomes and propensity to leave an organization.

Fisher and Gitelson (1983) applied meta-analysis procedures to the results of 43 past studies concerning the relationships of role conflict and ambiguity and their most frequently researched correlates. The purpose of this study was to draw conclusions about the magnitude and directions of these relationships in the population. They found that ambiguity had a positive and consistent, though weak, relationship with education and negative and consistent relationships with commitment, involvement, satisfaction with co-workers and promotion, boundary spanning, tenure, and age. Conflict had a positive relationship with boundary spanning and a negative relationship with commitment, involvement, satisfaction with pay, co-workers, supervision, and participation in decision making.

Change Agent Roles

Many varied roles of change agents have been identified in various studies. Goddu (1976), for example, reported that the role of extension agent in education has been referred to variously as field agent, resource agent, service agent, boundary person, linking agent, program developer, project officer, client advocate, and needs advocate. Piele (1975) also could not come to a single definition of educational linking agents. Although some of the functions overlapped, he identified three principal

types of linking agent roles--those of resource linker, process helper, and solution giver.

According to Havelock (1973), change agents act primarily as (1) catalysts, (2) solution givers, (3) process helpers, and (4) resource linkers, regardless of their titles and positions. Change agents carry out various duties in each of these roles. For example, as process helpers, change agents show the client how to recognize needs, set objectives, acquire relevant resources, select or create solutions, and evaluate solutions to determine if they are satisfying his needs.

Rogers (1983) identified the roles of change agents from the innovation diffusion perspectives and asserted that change agents (1) develop need for change among clients, (2) diagnose their problems, (3) create intent to change in the client, (4) translate intent into action, and (5) stabilize adoption and prevent discontinuances.

Gallaher (1967, p. 214) described how change agents play purposive roles that are designed to influence the process of change in a specific situation. He conceived various roles of change agent in relation to client as follows:

1. Analyst--the agent's main commitment is to interpret a situation for a client.
2. Advisor--the main commitment is to advise client regarding alternatives applicable to a given situation.
3. Advocator--the main commitment is to recommend to a client one from among a number of alternatives.
4. Innovator--the main commitment to the client is to create an innovation to satisfy a specific client need.

Beal (1981) provided a typology of the roles of change agents. These roles are as follows:

1. Educator: Extension agents present organized information about a problem or issue area, diagnose causes and suggest alternative courses of actions and solutions for consideration.
2. Consultant: Extension agents give advice and make recommendations.
3. Facilitator: Extension agents play more active and direct roles such as an enabler, broker, advocate, and/or arbitrator.
4. Organizer: Extension agents are seen as active participants in most stages of the social action process and taking responsibilities for making things happen or getting things done.
5. Administrator: They have formal positions in organizations and have responsibility for the operation of programs, provide leadership and reach the specified goals.
6. Researcher-applied: Beal's description of applied research carried out by change agents does not directly fit the roles of extension agents. However, extension agents do carry out some research work. Like other researchers, they are curious about farmers' problems, they ask questions about the problems, and they look for solutions to the problems.

Boyle (1981) reviewed the roles of a continuing education programmer and came up with four major roles:

1. The analyst: This role is essential for defining the problem or need in all types of continuing education programs.
2. The stimulator: This role might also be called an "activator" or "motivator" and is essential for clients to gain enthusiasm for the program.
3. The facilitator: The continuing education programmer links the needs of the clients with the appropriate knowledge or resources.
4. The encourager: The continuing education programmer helps people realize their potential by establishing a climate of trust.

Studies have been carried out to find how various personnel view the role of change agents. Klatt (1984) investigated county extension agents' current and desired role perceptions as the leading educators in communities and found that 90% of the county extension agents aspired to be leading educators in their communities. However, as many as 65% of them currently did not perceive their role as leading educators. The results also showed no significant difference between extension agents in urban and rural office in their perception of their roles. Kosoko (1980) investigated the role of extension supervisors of the Washington Cooperative Extension as perceived by selected extension personnel. The study found no significant difference among various extension personnel in their perception concerning the importance of the role of the supervisors. The relationship between how important the role of the extension supervisor is perceived to be and the extent to which the role is perceived to be performed were found positive. However, the perception of

supervisors consistently showed a lower degree of relationship than the perceptions of county agents, county chairpersons, program leaders, and specialists.

Hannah (1979) found significant differences among administrators, extension workers, and clientele in their ratings of the urban agent's various job responsibilities. Administrators rated significantly different from the extension workers and the clientele in many of the job responsibilities. Wilkening (1958) found differing views of county committeemen and extension agents with respect to the role of county extension agents. The former viewed extension agents as "generalists" rather than "specialists," whereas the latter viewed themselves as a combination of generalist and specialist. Significant differences were found between the perceptions of extension workers of the United States and Canada regarding the importance of eight out of fourteen role functions (Yeshewalul and Griffith, 1984).

Elsewhere, Evans (1981) conducted a study to find out if resource room teachers, regular classroom teachers, and principals differ in what they think the role of the resource teacher should be and what they know it actually is. The results of the study indicated that there was agreement among the three groups that actual role behaviors matched desired role behaviors in some areas. The three groups also agreed that actual role behaviors did not match desired behaviors in several other areas.

Barrick (1986) investigated roles of local vocational education supervisors as perceived by school superintendents, state vocational supervisors, local vocational teachers, and local supervisors.

Differences were found in role perceptions between current and expected roles and among the four groups.

Rajagopal and Hanumanthappa (1981) found that three categories of Farmers' Service Societies (FSS) personnel perceived only some of their roles as important. They did not consider other equally important roles as important functions to be carried out.

In Nepal, a survey of 23 JTs and 34 JTAs in three Terai districts under the Training and Visit system revealed that the extension agents did not perceive some of the designated important roles as work to be performed by them. None of the JTAs perceived such duties as "to submit program of work," "to conduct field trials and demonstrations," and "to maintain diary" as part of their jobs. Only 5% of the JTAs perceived "to organize field days, field tours, and group meetings," and 3% of the JTAs "to check the diary of PLAAs" as parts of their responsibility. None of the JTs perceived "to go through the diary of JTAs" and "to submit a program of work" as part of their jobs (APROSC, 1987).

There is an agreement among various scholars that the roles of change agents are broad and serve various purposes. Whatever may be the roles of change agents in any organization, they are basically determined by the philosophy of the organization. Therefore, in defining the roles of extension workers, the basic concepts of the extension service should be taken into consideration. Leagans (1958) provided some central concepts around which extension service has its foundation. These concepts should guide extension workers in their day-to-day activities. The concepts of extension as envisaged by Leagans (1958, pp. 7-8) are:

1. The supreme central function of the Extension Service is to promote the development of people economically, socially, and culturally by means of education.
2. The Extension Service must be understood, conducted, and judged as an educational instrument.
3. The Extension Service must be operated in close, continuous, mutual relationship with the people it serves.
4. The extension service must be organized to provide educational services for large numbers of people who need them, and to respond to their needs without restriction to the extent of its resources.
5. The Extension Service must seek to achieve its purpose by initiating, stimulating, and guiding the process of education.
6. The Extension Service program must be oriented and organized to deal with the current practical problems of people and also with those of a long-time nature.
7. The essential purpose of extension teaching is to facilitate among people a grasp of the meaning of knowledge, to help them see its connection to their problems, and to help them develop the skills needed to apply useful knowledge to their problems.
8. The Extension Service must be an institution in which those whom it serves derive satisfaction from their participation.
9. The county extension staff must be viewed as occupying the central position in the organization and conduct of extension work.
10. The program of training for extension workers must be designed to develop competent technicians who are also effective educators (pp. 7-8).

Di Franco (1958) also compiled extension principles from various sources. The author then came up with the idea that extension education: (1) be based on conditions that exist, (2) involve people in actions that promote their welfare, (3) develop programs gradually, (4) aim basically at people's interests and needs, (5) use democratic methods, (6) keep programs flexible, (7) work through understanding of the culture, (8) use

local leaders, (9) use existing agencies, (10) work with all the members of the family, (11) make programs as broad as needs of rural people, (12) evaluate continuously, (13) work with all classes of society, (14) keep in line with national policies, (15) use the community approach, and (16) help people recognize their needs.

Brunner and Yang (1949), in discussing the principles of extension work, pointed out that:

1. The extension worker must start with the people where they are.
2. The program must meet obvious needs felt by the people.
3. The people must share in the development of the program.
4. Extension workers must use the local leaders as responsible representatives of the service.
5. The simpler the society, the broader the extension program must be.
6. The extension worker should be prepared to learn from the local people whom he serves.
7. The extension worker is an educator.
8. The extension worker must serve all classes and conditions of people.
9. There should be no discrimination.
10. The simpler or more primitive the society, the greater the utility of the principle of demonstration.

In a nationwide study of county extension agents' work in the United States, Brumback et al. (1978) reported 14 duty areas of the county

extension agents. These were as follows: (1) assess community needs, (2) prepare annual plan of work, (3) prepare specific programs, (4) conduct programs, (5) provide specific information on request, (6) provide specific technical assistance on request, (7) recruit, train, and utilize lay leaders, (8) evaluate program effectiveness, (9) report activities, impact, and accomplishments, (10) develop and maintain public relations, (11) develop and maintain staff relationships, (12) maintain and increase personal professional competencies, (13) perform administrative functions, and (14) supervise staff.

In a study of district level extension workers in Nepal (APROSC, 1987), the roles of JTAs under the Training and Visit system have been identified as: (1) schedule visits with PLAA, (2) organize JTA Headquarters meetings, (3) help PLAA to disseminate information, (4) conduct field trials and demonstrations, (5) attend fortnightly training programs, and (6) select and replace contact farmers.

In another study (APROSC, 1988) about the sustainability of the Training and Visit approach to agricultural extension in Nepal, roles of JTAs were suggested as follows: (1) selecting, training, and working with Panchayat level contact farms (PLCF), (2) conducting extension activities such as farmers' field days, farmers' tours and meetings, and demonstrations, (3) supervising ward level contact farms (WLCF), (4) participating at the sub-center level training and the sub-center level farmers' field day, (5) reporting the activities of PLAAs and Panchayat level workers to the sub-center, and (6) participating in staff meetings in the district office.

The World Bank initiated Training and Visit system of agricultural extension has been adopted in many developing countries. This approach has been reported to be highly successful. Benor and Baxter (1984, p. 13) summarized the role and responsibility of the village level extension worker as follows:

> The main responsibility of the VEW is to visit regularly each of the eight farmers' groups of his area of jurisdiction (the "circle"), and to teach and try to convince farmers to adopt recommended production practices. He must also advise farmers on the price and availability of necessary inputs and market conditions. He should report farmer response to recommendations, production problems, input demand and availability, and market conditions to his supervisor (the Agricultural Extension Officer) and in training. Days without a regularly scheduled visit or training are used for makeup visits, farm trials, and field days. In addition to making field visits for at least eight days, each fortnight the VEW must attend a fortnightly training session given by Subject Matter Specialists (SMSs) and a review meeting with his Agricultural Extension Officer (AEO).

Roles of extension workers have been defined to carry out varieties of activities. However, these roles do not remain static. They change over time according to the revision in the mission of the organization as influenced by changes in the needs of its clientele. Gerber (1985), in a national survey of 501 extension horticulture specialists, found that their role was perceived to be changing. A majority of the specialists felt that they were spending less time on client visits than ten years ago. They appeared to be moving away from the traditional activities of farm visits and personal interaction with individual producers. Schouwe (1980) also found that extension agents in the Dominican Republic had

their roles changed largely in the scope of subject matter areas in which to provide educational programs.

Performance of Roles

Role performance can be defined as actual behavior of an individual occupying a particular position. A literature review on the subject revealed the existence of a gap between current and expected performance of individuals. Various scholars have discussed factors determining this gap.

Based on previous work in Papua, New Guinea, McKillop (1981) reported that most highly qualified extension agents spent less than half their working time with farmers. Other demands on their time such as organizational maintenance served to limit contacts with farmers.

Sherer (1986a) reported from Israel that in some cases paraprofessionals performed their duties as expected, but in other cases they did not. In another study, the author found that Israeli social workers performed tasks which were not necessarily within the domain of their official functions. This was mainly due to uncertainty about roles as well as to a lack of clarity of these roles (Sherer, 1986b).

Individuals in an organization need to know exactly what is expected of them if they are to perform successfully. Batten (1988, p. 36) asserted that "Well-written performance standards are all expectations. They must define the results required, in terms which can be measured. And they must progressively provide more 'stretching' goals to give people something to reach for." Wright (1984) also emphasizes that individuals

should clearly know their roles and responsibilities, which can be achieved through job description. Such job description, the author said, should contain clear statements of the outputs to be produced by the employee and specific standards that describe the quality and quantity of the performance in each output area. It should be used to clarify values, plan future assignments, and correct problems that limit professionalism (Halatin and Flannery, 1981).

Job descriptions serve as the basic building block of any organization. Its importance does not need any exaggeration. Some of the uses of job description as identified by Grant (1988) are given below:

1. Self-development: Individuals benefit from generating, compiling and presenting job-related data and writing their job descriptions. During this process, they learn to appreciate their job--why their job is important and how they could better spend their on-the-job time.
2. Team building: When individuals understand another's role they are less critical of co-workers' performance and become more supportive of each other.
3. Spotting areas for work simplification studies and methods manuals: Identifying high time-consuming tasks suggests areas in which methods and procedures manuals may be useful.
4. Employee motivation: Job description helps motivation by showing the desired magnitude of effort as well as direction. It gives insights into sources of intrinsic job satisfaction.

5. Guiding change: Job descriptions are especially useful in times of rapid change. For example, they help prevent key tasks from being lost or misassigned. They also help in the planning stages during change.
6. Aiding the outplacement of employees: Job descriptions are often used for recruitment, selection, placement, and job orientation.
7. Determining qualification: Job description helps in determining the minimum qualification of individuals--skills, knowledge, education, and experience.
8. Strategic point control: The job description provides insight into how often the management should check on various aspects of a person's job as well as what area of work require accurate or precise measurement methods. It also shows which areas should receive priority attention for control purposes.

Although the job description serves various purposes for effective functioning, it should not be considered as a boundary for carrying out the roles and responsibilities. The employees should be given some flexibility to exercise their spirit and talents beyond the boundary of job description. Schuster (1988, p. 16) commented:

> It is our duty as leaders to give our employees room to bring all of themselves to the workplace. We can start by asking everyone up and down the ranks to fill out personal mission statements concerning both our work and our life. We should ask ourselves why we do what we do all day, and how we feel about it. These statements will serve to remind us that we are all more than our job description. And our workers will know that we recognize the vast world of talent and values each one brings to the workplace.

Halatin and Flannery (1981, p. 11) have also expressed similar concerns that employees' talents are not adequately utilized. In their words:

> Although the formal requirements are identified in the job description, quite often the actual activities performed are quite different. Perhaps there is an emphasis on minor tasks in the actual job or working conditions limit the room for professional growth. The work perhaps may meet organizational standards but be far below the employee's personal standards.
>
> The employee with an attitude of professionalism may be aware of factors and conditions that hamper quality. The employee comes to feel that his or her talents are not being tapped.

The authors also point out that professionals enjoy the feelings of self-satisfaction in a job well done. However, professionals need to be motivated from supervisors in order to keep up their spirit. Halatin and Flannery (1981, pp. 10-11) reiterated that:

> A true professional brings standards and objectives that focus on competence and work of the highest quality. The professional wants a sense of pride in accomplishment. It is the continued striving for achievement of this that improves productivity....But professionals also need good supervisors who can channel their efforts toward organizational goals. They need support, recognition, and encouragement to perform up to their own standards.

Gallaher, Jr. and Santopolo (1967, pp. 229-230) have emphasized the possession of people skills by extension agents as the major criteria in measuring their performance:

> A focus on roles should provide more relevant criteria for measuring agent success. Within this frame of reference, "success" is the ability to establish, maintain, and utilize the human relationships necessary to achieve relevant learning experiences in the client. Involving people in an educational experience is a complex process that demands knowledge of social organization, social action, and motivation to a degree rarely attained by the average Extension worker.

> However, unless his performance is judged against this background of expectations, an agent can hardly be expected to narrow the gap between "what is" and "what should be" in his role as a change agent. The view presented here contrasts with the commonly held notion that criteria such as number of meetings, telephone calls made and received, newspaper articles written, or pamphlets distributed, are adequate measures for performance rating. We suggest further that an agent who is sensitive to roles, hence to behavior as opposed to subject matter, can better evaluate his own skills in a given situation, and thereby make more accurate judgments of the needs for other kinds of support from the knowledge center.

Connelly (1985, p. 54) believed that "excellent performance" is associated with the work spirit of the employees and the organizations can complement fostering the work spirit of individuals by developing:

> A shared, articulate purpose. The organization that knows what it is and where it's headed, has a corporate value statement that evolves and changes as the organization does, and recognizes the importance of strategic issues creates an environment that fosters work spirit in its members.
>
> Supportive organizational culture. This means that good performance is recognized; risk taking is encouraged; failures aren't punished; entrepreneurial behavior is encouraged; a strong sense of teamwork exists; and managers are receptive to employees' contributions, regardless of the person's level.
>
> Development supervision. This quality refers to a perspective whereby supervisors view employees as growing human beings with unique strengths and talents. The developmental supervisor interacts with the employee, channeling those strengths to satisfy organizational goals and optimize the employee's satisfaction and spirit (p. 54).

Personal commitment certainly leads individuals to higher performance. The study conducted by Smith et al. (1983) on the organizational commitment among county extension agents in the Ohio Cooperative Extension Service (OCES) identified self-image reinforcement as a factor to be most

highly related to organizational commitment. Based on the results of the study, the authors concluded that:

> All people possess a self-image, which is an idea or general notion they have of themselves or of their role. When agents had the feeling that the Cooperative Extension Service encouraged them to behave in ways that represented their true feelings or attitudes, they scored high on self-image reinforcement and also reflected a higher level of commitment to the OCES. However, when agents viewed the organization as encouraging them to act in ways different from their notion of their role, they tended to score low on organizational commitment (pp. 22-23).

Peters and O'Connor (1980) studied situational variables that adversely affected the performance of 62 persons employed in a wide variety of managerial and non-managerial jobs. They identified eight resource variables necessary for task accomplishment and three dimensions along which these resources might vary across work situations. The resource variables identified were: (1) job-related information, (2) tools and equipment, (3) materials and supplies, (4) budgetary support, (5) required services and help from others, (6) task preparation, (7) time availability, and (8) work environment. The three dimensions to which poor performances were attributed were: (1) the needed resource being inaccessible (unavailability), (2) not receiving enough of the needed resource (inadequate quantity), or (3) receiving a needed resource but finding its quality to be poor (inadequate quality).

Brown (1988), discussing dysfunctionalism, which involves unfinished assignment, delayed work, poor quality performance, disloyalty, redundancy, and counter-productive behavior of all kinds, argued that it occurs in all the organizational systems because employees are not given

the proper attention they deserve. Organizational objectives, the impersonality factors, organizational communication systems, responsibility and power, and bureaucratic uncontrollability all influence how individuals are treated, which ultimately influences performance in the organizations. If the organizational systems have to function for increased productivity, said Brown (1988, p. 36), individuals and their needs have to be taken into account:

> The members of the organization are, first of all, individual human beings, and do what such individuals can be expected to do....They do what they have contracted to do, sometimes well, sometimes poorly, sometimes with spirit, sometimes mindlessly. And, on occasion, for a variety of reasons, they also do other things, or nothing at all. They are moved strongly by need or how these needs are felt, but by habit as well....Humans also think, and how they think affects how they act.

Kinlaw (1988) pointed out five conditions contributing to performance: fairness, clarity of purpose, appreciation of work done, managerial responsiveness to employee needs, and employee involvement. Kinlaw (1988, p. 40) stressed that "performance will not be superior if employee perception is positive about only one of the five, two of the five or three of the five. So the goal of managers and supervisors must be to create employee perceptions that are positive about all five of the conditions."

Halatin and Flannery (1981) argued that many factors, particularly title, salary, position, and training, influence the individual's view of job tasks.

Technological advancement also contributed to the gap between the current level and the desired level of performance. Although this may be

more common in innovation dissemination organizations like extension service, Downs (1967, p. 209) described this situation for personnel in bureaucratic organizations: "Bureaus whose operations are dependent upon innovation-prone technologies are likely to experience more frequent performance gaps than those based on more stable technologies."

Good performance is not possible without an understanding of the role, especially by new individuals. Louis and Sieber (1979) have identified several mechanisms that facilitate the learning of the role at the entry into the job through the first year. These, according to the authors, are:

> Boundary definitions provided by the specifications for the project; background perspectives derived from former statuses; exploratory gestures, which allowed the agent and client to feel each other out before engaging in a joint task; the fostering of role latitude, which gave the agent freedom to experiment with alternative ways of performing the role; and the development of criteria of performance (p. 150).

Individuals hold a different view of their own job performance from that held by other people. Thornton (1980) reviewed comparisons with appraisals by supervisors, peers, and subordinates and found that self-appraisals tended to manifest more leniency, less agreement with other sources, less discriminant validity, and less reliability than ratings by supervisors and peers. Self-appraisal, on the other hand, showed less halo and adequate construct validity than ratings by the comparison group.

On the gap between supervisors' and self-ratings by the subordinates, Bernardin and Abbott (1985, p. 152) presented an argument that:

> ...Each may store different elements of performance in memory and recall different elements of that performance when it comes time to make an appraisal. Differences in

> ratings may also be the result of the supervisor and the employee viewing different elements of performance as important, and thus rating performance on the basis of essentially different sets of behavior. In addition, employees and supervisors may differ in their views of the importance of the same behavior. If any of these explanations are valid, there should be an empirical relationship between the extent of agreement between personnel and their supervisors on the most important duties and responsibilities of each subordinate's job and the extent of agreement in self versus supervisory ratings.

Bernardin and Abbott (1985) sought to predict discrepancies between self and supervisor ratings in a large hospital and found that role perceptions were an important indicator of rater performance. The result of the study of 132 nursing, administrative, and support personnel and 31 of their supervisors indicated a significant correlation between the extent of agreement in perceived job roles of the subordinates and the discrepancy between self and supervisor ratings. The more the supervisor and the subordinate agreed on the important elements of the latter's job, the more the subordinate and the supervisor agreed on the subordinate's performance. The study also indicated that higher levels of role congruence were associated with higher ratings of subordinate performance by the supervisor as well as with higher levels of satisfaction of the subordinate with the supervisor. Other studies have also suggested that the lack of agreement between the subordinate and the supervisor regarding various aspects of the subordinate's role influence the discrepancy between self and supervisory evaluations (Brief and Aldag, 1976).

Mitchell and Wood (1980) investigated supervisors' responses to poor performance by subordinates and found that supervisors attributed

causality of poor performance more to internal factors such as the subordinate's personality, ability, and effort than to external factors such as task difficulty, lack of support, or insufficient information.

Supervisors have tremendous impacts on the performance of their subordinates. The relationship between supervisors and subordinates is illustrated by Bell (1987) in his analogy of a coach and player relationship. Sometimes a player fails to perform as expected, and the reasons for the gap between performance required of and performance delivered by the player, as pointed out by Bell (1987, pp. 28-29), are as follows:

> Player-Role Match....The player would be more successful in a different role or on a different team.
>
> Play Clarity. Perhaps the player is not clear on the performance you require....
>
> Play Priority. Sometimes failure is due to player perception that the performance you expect is not really of high importance.
>
> Player Competence. Failure can sometimes be due to a skill deficiency. Players can't do well if they don't know how....
>
> Player Commitment. Failure can reflect a will deficiency. Players don't do well with low desire or motivation....
>
> Obstacles. There may be real or imagined barriers interfering with good performance which the coach can address.
>
> Reward for Failure. The player may perceive more reward for poor performance than good performance. Players who get attention (albeit negative) when they do poorly and are ignored when they do well sometimes stop doing well.
>
> Performance Feedback. Does the player receive clear, rapid information which identifies the condition of performance so his or her energy can be more accurately focused?
>
> Valued Outcomes. The player may fail to see positive outcomes (or rewards) for good performance.

Socioeconomic Characteristics and Role Performance

Agents similar in their personal characteristics such as age, education, and training tended to have similar perceptions of their roles (Aldrich and Pfeffer, 1976). The age of the village level worker was positively related to his role performance; older workers performed their roles better than the younger workers (Kherde and Sahay, 1972; Saigaonkar and Patel, 1970). Atala (1986) found that age positively associated with role performance, but not with role perception. However, in contrast with Atala's (1986) finding, Klatt (1984) found age positively associated with role perception. Age and sex were not associated with perception of either importance or performance of roles as reported by Kosoko (1980). Glen et al. (1977) reported a moderate, but consistent positive correlation between age and job satisfaction, which influences the performance of an individual. The finding of Gibson and Klein (1970) suggested a linear positive relationship between employee satisfaction and age.

Kittrell and McCracken (1983), in their study of county 4-H, agriculture, and home economics agents, found a low positive relationship between job satisfaction and performance. Agents who were more satisfied with their jobs tended to outperform less satisfied agents.

Education changes people in terms of their thinking, feeling, and knowledge and, consequently, their performance. Insufficient training of extension agents has been suggested as one of the reasons for their ineffectiveness (Leonard, 1972). McKillop (1981) found agents with more agricultural education also to be more professional in their work.

However, Saigaonkar and Patel (1970) and Klatt (1984) reported no significant association between extension agents' education level and their job success. However, contrary to their expectations, Kherde and Sahay (1972) found lower performance of workers with higher education as compared to those having lower education.

Individuals who have been on a given job longer would have acquired more experience and skills and consequently perform their roles and manage their responsibilities better than those who have been on the job for a short period. Some agents with more tenure in extension appeared to have the most favorable attitudes toward the organization (Schouwe, 1980). McKillop (1981) reported that number of years of service contribute to extension skills. Job tenure and the rank of the extension agent were not associated with either role perception or role performance (Klatt, 1984). Gibson and Klein (1970) also observed a linear negative relationship between employee satisfaction and length of service. The findings of Smith et al. (1983) indicated that organizational commitment increased with increasing tenure.

Summary

Role is the set of behaviors expected of an individual who occupies a particular position in a group or organization. Roles of individuals are not fixed and unchanging entities. They change, for example, with changes in technology, in scientific understanding, in resources, in capacities of the individual, and in the needs and demands of the clientele.

The review of literature in this chapter indicated that role conflict and role ambiguity appear to cause tension, dissatisfaction, psychological withdrawal from the group or the organization and, consequently, low productivity. The literature also provided evidence to indicate that role conflict and role ambiguity have many sources. Some of the important sources that came across in the review are: multi-role expectation, internal vs. external expectation, incompatible and inconsistent role expectation, role changes, and size and complexity of the organization.

Roles of change agents were found to be many and varied. For example, Goddu (1976) reported that the role of extension agent was referred to variously as field agent, resource agent, service agent, boundary person, linking agent, program developer, project officer, client advocate, and needs advocate. Beal (1981) described change agent as an educator, consultant, facilitator, organizer, administrator, and researcher. Boyle (1981) in turn pointed out the roles of change agent as an analyst, stimulator, facilitator, and encourager. However, while defining the roles of agricultural extension worker, the basic concept and philosophy of agricultural extension should serve as guidelines.

Individuals in the organization need to know exactly what is expected of them if they are to be effective in their performance. This can be done through clearly stated job descriptions. At the same time, individuals should be given some flexibility to exercise their spirit and talents beyond the boundary of job descriptions.

Factors that influence the performance of roles were also reviewed. Job related information, task preparation, work environment,

organizational objectives, organizational communication systems, managerial responsiveness to employee needs, technological advancement, and bureaucratic uncontrollability were among those described in various works. The literature also revealed that individuals hold a different view of their own job performance than that held by others.

CHAPTER III. RESEARCH PROCEDURE

Several research procedures were used to accomplish the stated objectives of the study. These procedures are presented in this chapter under the following headings: (1) population and sample, (2) instrumentation, (3) pilot study, (4) data collection procedure, and (5) data analysis.

Population and Sample

This study was concerned with the importance of JTAs' roles and the performance of those roles, as perceived by different groups of extension personnel. The population for the study consisted of all extension personnel in the country. They fell into three hierarchical levels. At the top level, there were 18 administrators in the Ministry of Agriculture, the Department of Agriculture, and Regional Directorates, who were responsible for policy making and planning of extension programs; at the middle level, there were 75 Agricultural Development Officers (ADOs), who were responsible for supervision of and support to the JTAs; at the field level, there were permanent JTAs in all the 75 districts, who were responsible for the implementation of extension programs at the field level.

All the administrators and ADOs were included for the study, whereas 215 permanent JTAs were selected as a sample.

Stratified random sample technique was used so as to represent JTAs from each developmental region and geographic region. Nine districts were randomly selected from each developmental region except the Far-Western

Development Region from which only seven districts were selected. Fewer districts were selected from the Far-Western Development Region due to the smaller size of the region. Out of the nine districts selected in each of the four developmental regions, five districts were from the mountain region and four districts from the Terai region. In case of the Far-Western Development Region, there were only two districts from the Terai region. Five permanent JTAs were then randomly selected from each district. The number of JTAs thus totaled 45 in each of the four developmental regions and 35 in the Far-Western Development Region.

Instrumentation

An instrument was developed by the researcher to collect the data for the study. The instrument was developed based on the available literature on the tasks of agricultural extension workers that was in congruence with the roles and responsibilities of JTAs in Nepal. Four ADOs who came to attend a workshop at the University of Wisconsin during the fall of 1987 provided some information on the job roles of JTAs. A jury of experts comprised of (1) five Iowa State University professors, (2) one professor at Michigan State University who had extensive experience with the agricultural extension system of Nepal, (3) three high level officials in the Ministry of Agriculture, and (4) two IAAS professors reviewed the task items on the instrument for content and face validity.

The research instrument and method proposed for use in the study were submitted to the Human Subjects Committee at Iowa State University and its approval obtained before the study was conducted.

The instrument was divided into two parts. The first part consisted of 91 task items grouped under eight roles: (1) the program determination role contained seven task items, (2) the program strategy role contained 18 task items, (3) the program implementation role contained 14 task items, (4) the educational role contained 14 task items, (5) the role directed to female farmers contained nine task items, (6) the role directed to rural youth contained eight task items, (7) the evaluation role contained 15 task items, and (8) the professional development role contained six task items. The second part of the instrument consisted of eight questions to gather information on personal background of the respondents such as job tenure, number of years in present position, age, education, job location, and home district.

The final instrument was prepared and administered in Nepali. The instrument was first developed in English, then translated into Nepali and back into English in order to check the accuracy of the Nepali translation.

Respondents were asked to indicate their perceptions for importance of each item as a task of JTAs in the left column and their perceptions of how well each task was performed by JTAs in the right column. Separate five-point rating scales were used to indicate perception of importance and performance of tasks of JTAs as follows.

Scale for perceived importance of each item as the tasks of JTAs:

5 = Very important
4 = Important
3 = Undecided
2 = Unimportant
1 = Very unimportant.

Scale for perceived level of performance of each task by JTAs:

5 = Performed very well
4 = Performed well
3 = Undecided
2 = Performed poorly
1 = Performed very poorly.

Pilot Study

The researcher traveled to Nepal toward the end of the summer of 1988 to collect the data. After arrival in Nepal, the researcher approached the higher officials in the Ministry of Agriculture for their comments on the instrument as well as for their cooperation in the study. The instrument was printed in Nepali for field study in the form in which it would appear in the final collection. It was then administered to 30 extension workers in the Kathmandu district and in the Department of Agriculture to ensure its appropriateness. Those persons selected in the field test were not included in the sample of extension personnel. The respondents were asked to comment on the instrument regarding any clarification needed. Their behavior and reactions were also closely observed. The pilot test did not indicate a need for any changes in order to improve the quality of the instrument.

Dr. David L. Williams, major professor for the researcher, also traveled to Nepal to advise on research procedures, to meet with officials in seeking support for the study, and to gain an understanding of the agricultural extension service in Nepal.

Data Collection Procedure

Because the respondents consisted of different groups of extension personnel who were spread all over the country, the majority of them were not readily accessible. The most difficult to approach, either in person or through other communication means, were the JTAs and the majority of the ADOs, who were located in remote and difficult parts of the country. Keeping these obstacles in mind, the investigator wrote a letter to each ADO two weeks in advance soliciting their support and cooperation and that of JTAs in their district for the study. A similar letter was also written to all the regional directors asking for their support and cooperation and that of ADOs of their respective regions.

Instruments were hand carried to all the respondents. Instruments were handed to regional directors and ADOs during the annual review meetings in each of the regional headquarters. The researcher attended the meetings in two regional headquarters, Kathmandu and Pokhara, in the Central and Western Development regions. The regional directors and the ADOs responded to the instruments during their three-day meeting and returned them. On the same occasion, ADOs were also requested to carry the instruments to JTAs of the selected districts, as this would be the fastest way of sending the instrument to them. JTAs made their responses in the instrument when they came to attend the monthly meeting at the District Agricultural Development Office and mailed them back as requested. A self-addressed and stamped envelope was enclosed to send the completed instrument back.

Two letters were also enclosed in the instrument for each prospective respondent. One letter written by the Deputy Director General (Agricultural Extension) and signed separately for each respondent asked for cooperation in the study. The other letter, written by the researcher, emphasized the purpose of the study and the value of each response. The letter also stressed that instrument responses were confidential, anonymity of respondents was guaranteed, and participation was voluntary. A copy of each letter is included in the Appendix.

A follow-up letter was mailed to the ADOs one week after the regional meeting, reminding them of the instruments for JTAs in their respective districts.

The researcher traveled back to Iowa State University with completed instruments from most of the administrators and ADOs. Completed instruments from the remainder of these groups and the JTAs were collected by an enumerator and mailed to the researcher at different times within a three-month period. Out of 308 included in the sample, 279 responded. Two hundred and sixty-nine instruments were usable resulting in an 87.34% response rate. The response rate from the administrators was 94.5%, from ADOs 93.33%, and from JTAs 84.65%.

Data Analysis

The data were coded and analyzed using the Statistical Package Program for the Social Sciences (SPSSx) (Nie, 1983). Frequencies were computed for all the task items in the instrument to check the accuracy of data coding.

Cronbach's alpha procedure was used to examine the level of internal consistency and stability of the instruments. Results from the reliability analysis are presented in Chapter IV.

Frequencies and percentages were computed for demographic characteristics information of the respondents. Means and standard deviations were computed for all the task items.

Analysis of variance and t-test procedures were performed to test the hypotheses. The Scheffé test was used to locate the source of differences when significant differences were observed in the analysis of variance at the .05 alpha level that was established a priori.

CHAPTER IV. ANALYSIS AND FINDINGS

The primary purpose of this study was to determine how extension personnel perceive the importance of JTAs' roles, to determine how they perceive JTAs' performance of these roles, and to develop a comprehensive job description for JTAs. In this chapter, the data collected from the extension personnel are analyzed, and the findings are presented in congruence with the objectives and hypotheses stated in Chapter I.

The chapter is divided into the following sections: (1) Reliability of the Instrument, (2) Demographic Characteristics of Respondents, (3) Importance and Performance of Tasks, and (4) Hypothesis Testing.

Reliability of the Instrument

Cronbach's alpha procedure was used to examine the level of internal consistency and stability of the task items in the instrument, both for their importance and performance. The coefficients were computed for each role and the composite measure. Table 1 shows the results of the reliability test; the alpha coefficients for importance and performance for each role ranged from .78 to .95, except in one case. The program determination role had an alpha coefficient of .62 for importance. The composite alpha coefficient was .96 for importance and .98 for performance.

Demographic Characteristics of Respondents

Information on the background of the extension personnel was collected through the instrument. Extension personnel were requested to provide

Table 1. Cronbach's alpha coefficients for reliability of instrument

Role	No. of items	Alpha coefficient	
		Importance	Performance
Program determination	7	.62	.84
Program strategy	18	.83	.92
Program implementation	14	.82	.89
Education	14	.85	.88
Special programs for female farmers	9	.86	.89
Special programs for rural youth	8	.89	.95
Evaluation	15	.90	.93
Professional development	6	.78	.84
Composite	91	.96	.98

information on their age, gender, education, tenure with extension, tenure in current position, the region currently served, and the region of their origin.

Hierarchical level

As described in Chapter II, the entire population of ADOs and administrators participated, whereas JTAs were sampled. ADOs and JTAs were spread all over the country, but the administrators were centrally located in the Department of Agriculture or the Ministry of Agriculture. Five regional directors were also included in the hierarchical level of administrators.

Age

A large majority of JTAs (76.6%) reported their age range between 26 and 35 years, and ADOs (57.1%) between 36 and 45 years (Table 2). The majority of the administrators (58.8%) also reported their age range between 36 and 45 years. None of the ADOs and the administrators were 25 years or younger, whereas none of the JTAs were 46 or older.

Table 2. Distribution of respondents by age

Hierarchical level	Age	N	Percent	Cumulative percent
JTAs	25 and younger	29	16.6	16.6
	26-35	134	76.6	93.1
	36-45	12	6.9	100.0
ADOs	26-35	20	29.9	29.9
	36-45	40	57.1	89.6
	46 and older	7	10.4	100.0
Administrators	25 and younger	0	0.0	0.0
	26-35	1	15.9	5.9
	36-45	10	58.8	64.7
	46 and older	6	35.3	100.0

Gender

A large percentage of the respondents was male. There were only four females, and they were employed at the top administrative level.

Tenure with extension

The tenure of respondents with extension is presented in Table 3. The majority of JTAs (53.6%) had been with extension between 6 and 10 years. Only 16.6% of JTAs indicated tenure of 11 years or more.

The tenure of ADOs was widely and almost evenly distributed across the categories. Eight ADOs (11.8%) reported that they had been with extension for 1-5 years, whereas 19 ADOs (27.9%) reported tenure of 21 years or more.

None of the administrators indicated tenure of 10 years or less. The majority of them (68.8%) reported tenure of 21 years or more.

Table 3. Distribution of respondents by tenure with extension

Hierarchical level	Tenure	N	Percent	Cumulative percent
JTAs	1-5	54	29.8	29.8
	6-10	97	53.6	83.4
	11-15	21	11.6	95.0
	16-20	9	5.0	100.0
ADOs	1-5	8	11.8	11.8
	6-10	11	16.2	27.9
	11-15	18	26.5	54.4
	16-20	12	17.6	72.1
	21 and above	19	27.9	100.0
Administrators	11-15	3	18.8	18.8
	16-20	2	12.5	31.3
	21 and above	11	68.8	100.0

Tenure in current position

Extension personnel were asked to report how long they had been in their current position. As shown in Table 4, a large number of the JTAs, 74 (40.9%), had been in their current position for 5 to 6 years. Slightly over one-fourth of the JTAs (28.7%) had 9 or more years of tenure in their current position.

A large number of ADOs had either 1-2 years of experience (35.8%) or 9 or more years of experience (22.4%) in their current position. A majority of the administrators (76.5%) reported their experience as 4 years or less. Out of this group, eight administrators (47.1%) indicated only 1-2 years experience in their current position.

Table 4. Distribution of respondents by tenure in current position

Hierarchical level	Tenure	N	Percent	Cumulative percent
JTAs	1-2	10	5.5	5.5
	3-4	20	11.0	16.6
	5-6	74	40.9	57.5
	7-8	25	13.8	71.3
	9 and above	52	28.7	100.0
ADOs	1-2	24	35.8	35.8
	3-4	11	16.4	52.2
	5-6	10	14.9	67.2
	7-8	7	10.4	77.6
	9 and above	15	22.4	100.0
Administrators	1-2	8	47.1	47.1
	3-4	5	29.4	76.5
	5-6	3	17.6	94.1
	9 and above	1	5.9	100.0

Education

Data on the highest level of education achieved by the respondents are presented in Table 5. An unexpectedly high number of JTAs, 97 (54.5%), reported having only a high school degree. The remaining respondents in this hierarchical level reported having received JTA training (29.2%) or an Intermediate in Science Agriculture (I.Sc.Ag) degree (16.3%).

The ADOs ranged from having only JTA training to having received MS degrees in agriculture. Unexpectedly, 17.4% ADOs had only JTA training. Most of the ADOs, however, had either BS degrees (29%) or MS degrees (42%) in agriculture.

Almost all the administrators (94.1%) reported having an MS or higher level of education in agriculture.

Table 5. Distribution of respondents by highest level of education

Hierarchical level	Highest education	N	Percent	Cumulative percent
JTAs	High school	97	54.5	54.5
	JTA training	52	29.2	83.7
	Intermediate (Ag)	29	16.3	100.0
ADOs	JTA training	12	17.4	17.4
	Intermediate (Ag)	8	11.6	29.0
	BS (Ag)	20	29.0	58.0
	MS (Ag)/Higher	29	42.0	100.0
Administrators	BS (Ag)	1	5.9	5.9
	MS (Ag)/Higher	16	94.1	100.0

Distribution of JTAs in developmental regions

Table 6 presents the number of JTAs and ADOs by developmental regions.

Table 6. Distribution of JTAs and ADOs by developmental regions

Hierarchical level	Development region	N	Percent	Cumulative percent
JTAs	Eastern	37	20.3	20.3
	Central	35	19.2	39.6
	Western	40	22.0	61.5
	Mid-Western	39	21.4	83.0
	Western	31	17.0	100.0
ADOs	Eastern	16	22.9	22.9
	Central	18	25.7	48.6
	Western	16	22.9	71.4
	Mid-Western	12	17.1	88.6
	Western	8	11.4	100.0

According to developmental region of origin Table 7 summarizes the distribution of JTAs in various developmental regions by their developmental region of origin. The data indicate that most of the JTAs were working in the same developmental region as that of their origin. Out of the five developmental regions, the Western Development Region employed the highest percentage of JTAs (90%) who had homes in the same region. The lowest percentage of JTAs (56.4%) employed from the same region was in the Mid-Western Development Region.

None of the JTAs who reported their home in the Far-Western Development Region had obtained employment in other developmental regions. However, some JTAs who reported their home in the Eastern Development

Table 7. Distribution of JTAs in developmental regions by developmental regions of origin

Developmental regions of origin	Developmental regions of service											
	Eastern		Central		Western		Mid-Western		Far-Western		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Eastern	30	81.1	3	8.8	1	2.5	1	2.6	3	10.3	38	21.2
Central	7	18.9	26	76.5	2	5.0	3	7.7	0	0.0	38	21.2
Western	0	0.0	5	14.7	36	90.0	13	33.3	6	20.7	60	33.5
Mid-Western	0	0.0	0	0.0	1	2.5	22	56.4	2	6.9	25	14.0
Far-Western	0	0.0	0	0.0	0	0.0	0	0.0	18	62.1	18	10.1
Totals	37	100.0	34	100.0	40	100.0	39	100.0	29	100.0	179	100.0

Region had obtained employment in all of the five developmental regions, although a large majority of them (81.1%) indicated working in their home developmental region.

According to their tenure Since a majority of all JTAs (53.6%) had a job tenure that ranged from 6-10 years, the distribution of JTAs across four developmental regions showed a similar trend (Table 8). In the Far-Western Development Region, the largest number of JTAs, 18 (58.1%) came from the 1-5 years of job tenure category. The remaining 41.9% of JTAs had job tenure of 6-10 years. Interestingly, but not unexpectedly, none of the JTAs serving in this developmental region had job tenure of 11 years or over. Only 9 out of 181 JTAs (5%) employed in the Central, West, and Mid-Western Development regions had job tenure of 16-20 years.

Distribution of JTAs in geographic regions

According to developmental region of their origin Table 9 shows employment of JTAs in the geographic region by developmental region of origin. Out of 108 JTAs working in the mountain region, the largest number, 40 (37%), came from the Western Development Region. In the case of the Terai region, out of 71 JTAs, the largest number, 23 (32.4%), came from the Central Development Region, although it was closely followed by JTAs, 20 (28.2%), who had homes in the Western Development Region. The smallest number of JTAs employed in both the mountain and the Terai regions came from the Far-Western Development Region, and altogether contributed only 10.1% of JTAs employed in the country.

Table 8. Distribution of JTAs in developmental regions by job tenure

Job tenure (years)	Developmental regions											
	Eastern		Central		Western		Mid-Western		Far-Western		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
1-5	10	27.0	5	14.7	8	20.0	13	33.3	18	58.1	54	29.8
6-10	21	56.8	24	70.6	22	55.0	17	43.6	13	41.9	97	53.6
11-15	6	16.2	4	11.8	8	20.0	3	7.7	0	0.0	21	11.6
16-20	0	0.0	1	2.9	2	5.0	6	15.4	0	0.0	9	5.0
Totals	37	100.0	34	100.0	40	100.0	39	100.0	31	100.0	181	100.0

Table 9. Distribution of JTAs in geographic regions by developmental regions of origin

Developmental regions of origin	Geographic regions: Mountain N	Mountain %	Terai N	Terai %	Total N	Total %
Eastern	21	19.4	17	23.9	38	21.2
Central	15	13.9	23	32.4	38	21.2
Western	40	37.0	20	28.2	60	33.5
Mid-Western	17	15.7	8	11.3	25	14.0
Far-Western	15	13.9	3	4.2	18	10.1
Totals	108	100.0	71	100.0	179	100.0

According to geographic region of their origin As JTAs were more likely to be employed in the developmental region of their origin, they were also more likely to be employed in the same geographic region as their origins (Table 10). Out of 108 JTAs posted in the mountain region, 65 (60.2%) had their home in the same geographic region. This trend seemed even higher in the Terai region; out of 71 JTAs posted in the Terai, 63 (88.7%) came from that region.

Table 10. Distribution of JTAs in geographic regions by geographic regions of origin

Geographic regions of origin	Geographic regions: Mountain N	Mountain %	Terai N	Terai %	Total N	Total %
Mountain	65	60.2	8	11.3	73	100.0
Terai	43	39.8	63	88.7	106	100.0
Totals	108	100.0	71	100.0	179	100.0

According to their tenure The data were analyzed to determine if the trend differed in the posting of JTAs in geographic regions based on their tenure. The data in Table 11 indicate no notable difference in the posting, although there were more JTAs in the mountain region (35.5%) than in the Terai (21.1%) with 1-5 years of job tenure. As one would anticipate, there were more JTAs in the Terai region (9.9%) than in the mountain region (1.8%) with 16-20 years of job tenure.

Table 11. Distribution of JTAs in geographic regions by job tenure

Job tenure (years)	Geographic regions: Mountain N	Mountain %	Terai N	Terai %	Total N	Total %
1-5	39	35.5	15	21.1	54	29.8
6-10	56	50.9	41	57.7	97	53.6
11-15	13	11.8	8	11.3	21	11.6
16-20	2	1.8	7	9.9	9	5.0
Totals	110	100.0	71	100.0	181	100.0

Importance and Performance of Tasks

The means and standard deviations for tasks in each role for the perceived importance and performance are presented in Table 12. The means and standard deviations of tasks on a scale of 1 to 5 ranged from 3.94 to 4.83 and from .38 to 1.06, respectively, for importance as compared to 2.08 to 4.50 and from .70 to 1.31, respectively, for performance. Almost all tasks had high means for importance, whereas almost all the tasks have

Table 12. Means and standard deviations for importance and performance of tasks within the eight roles of JTAs for all respondents

Role/task	Importance				Performance			
	Mean	S.D.	N	Rank	Mean	S.D.	N	Rank
Program determination role								
Determine extension program needs	4.72	.53	262	1	3.44	1.02	260	2
Develop a calendar of operation	4.62	.62	266	2	3.68	1.07	265	1
Establish program priorities	4.56	.67	264	3	3.30	1.07	263	4
Prepare an annual plan of work	4.50	.70	266	4	3.36	1.19	266	3
Involve community agencies in planning	4.33	.81	264	5	2.88	1.24	261	5
Assist ADO in budget preparation	4.02	.87	265	6	2.77	1.23	261	6
Prepare a long-range plan of work	4.00	.92	261	7	2.61	1.11	263	7
Program strategy role								
Develop working relationships with farmers	4.83	.38	268	1	4.13	.88	267	3
Prepare Village Panchayat profile	4.80	.47	268	2	3.67	1.20	268	8
Report activities and progress periodically to supervisors	4.77	.44	267	3	4.18	.87	268	1
Provide technical information to farmers upon their request	4.74	.53	264	4	4.16	.88	265	2
Consult with ADO/SMS on program direction	4.68	.54	266	5	3.85	.97	265	5
Secure sound research information from experiment stations and other sources	4.64	.55	269	6	3.31	1.14	267	13
Develop working relationships with community agencies	4.62	.52	269	7	3.47	1.01	268	9
Use research and technical literature in extension activities	4.62	.61	267	7	3.19	1.14	268	16

Table 12. Continued

Role/task	Importance Mean	S.D.	N	Rank	Performance Mean	S.D.	N	Rank
Use principles of motivation in extension work	4.58	.57	268	9	3.38	1.10	268	10
Use farmers' interest in developing extension programs	4.57	.66	269	10	3.29	1.13	268	14
Provide technical information on their own initiative	4.56	.67	265	11	3.78	1.07	265	6
Use problem solving approach in extension work	4.46	.67	266	12	3.37	1.04	264	11
Utilize a calendar of events	4.46	.68	262	12	3.37	1.09	261	11
Recognize customs and traditions of farmers	4.46	.61	266	12	3.76	.97	266	7
Use farmers' experience in developing extension programs	4.43	.63	267	15	3.22	1.07	269	15
Become acquainted with influentials in the area	4.32	.87	266	16	4.02	.89	266	4
Assist farmers to organize themselves for marketing their farm products	4.27	0.73	266	17	2.56	1.15	267	18
Use principles and procedures of teaching adults in extension activities	4.18	0.80	268	18	2.65	1.13	268	17
<u>Program implementation role</u>								
Select progressive farmers to conduct trials and demonstrations	4.79	.42	267	1	4.10	.86	267	2
Promote programs to increase production in such major crops as rice, maize, and wheat	4.78	.44	267	2	4.12	.88	267	1
Accomplish overall goals set by the ADO	4.73	.55	261	3	4.07	.94	261	3

Table 12. Continued

Role/task	Importance Mean	S.D.	N	Rank	Performance Mean	S.D.	N	Rank
Encourage farmers to develop new programs (such as nurseries and seed production)	4.72	.46	265	4	3.77	.99	268	6
Identify need for such farm inputs as vegetable seeds, fruit seedlings, farm tools, chickens, ducklings, and fishlings and supply them at cost	4.64	.63	267	5	4.02	.93	266	4
Plan and conduct trainings for farmers	4.64	.56	260	5	3.65	1.13	259	8
Promote new crops such as ginger, cardamon, coffee, and silkworms where climatic conditions are favorable	4.60	.55	264	7	3.17	1.14	265	13
Supervise and guide Agricultural Assistants where applicable	4.56	.55	266	8	3.77	1.13	268	6
Organize crop competition	4.54	.52	261	9	3.87	.97	261	5
Help develop farmers' problem solving skills	4.49	.54	267	10	3.41	1.07	265	11
Help farmers get farm credit	4.47	.66	266	11	3.46	1.11	266	10
Determine causes for non-compliance with recommendations	4.47	.61	262	11	3.23	1.12	261	12
Maintain records for crop productions, weather, market price, and other important events that affect farmers	4.44	.68	266	13	3.05	1.20	267	14
Modify recommendations according to local agro-climatic conditions	4.35	.75	267	14	3.50	1.04	268	9

Table 12. Continued

Role/task	Importance Mean	S.D.	N	Rank	Performance Mean	S.D.	N	Rank
Education role								
Conduct demonstrations	4.68	.47	266	1	4.12	.79	267	1
Conduct group discussions with farmers	4.57	.58	267	2	3.99	.94	267	2
Organize field days and exhibitions	4.55	.62	267	3	3.83	1.01	266	4
Make farm visits to advise farmers	4.55	.76	262	3	3.95	1.02	261	3
Hold regularly scheduled subject matter meetings with farmers	4.52	.64	262	5	3.44	1.14	261	7
Organize farmers' tours and field trips	4.52	.57	266	5	3.80	1.02	265	5
Regularly listen to radio agricultural programs	4.50	.63	267	7	3.22	1.15	265	9
Use several teaching methods in conducting extension programs	4.49	.62	263	8	3.41	1.04	264	8
Prepare appropriate teaching materials for extension work	4.48	.61	266	9	2.86	1.13	265	13
Use posters, wall charts for mass communications	4.44	.66	267	10	3.02	1.17	265	11
Post notices in common places to communicate with farmers	4.35	.81	261	11	2.99	1.21	262	12
Set office hours for farmers	4.34	.77	266	12	3.46	1.11	265	6
Use circular letters in conducting extension activities	4.09	.84	258	13	2.75	1.18	258	14
Disseminate messages through Pancha leaders	3.94	1.06	260	14	3.22	1.12	260	9
Special programs for female farmers role								
Encourage and involve female farmers in such activities as farmers' meetings, trainings, and field trips	4.53	.61	267	1	3.10	1.16	268	1

Table 12. Continued

Role/task	Importance Mean	S.D.	N	Rank	Performance Mean	S.D.	N	Rank
Provide agricultural and home economic information to female farmers	4.44	.66	266	2	2.65	1.25	266	6
Establish program priorities geared to the needs of female farmers	4.43	.63	266	3	2.77	1.13	267	4
Encourage and involve young women in rural youth programs	4.40	.63	266	4	3.08	1.19	264	2
Recognize needs of female farmers	4.37	.66	258	5	2.67	1.09	258	5
Become acquainted with female farmers	4.25	.74	268	6	2.79	1.24	266	3
Prepare an annual plan of work for female farmers	4.18	.78	267	7	2.26	1.02	266	7
Maintain a log for activities for female farmers	4.09	.79	264	8	2.22	1.03	265	8
Prepare a long-range plan of work for female farmers	4.02	.85	268	9	2.08	.95	268	9
Special programs for rural youth role								
Develop a 4-H annual plan of work	4.47	.67	260	1	2.95	1.26	260	6
Involve 4-H members in agricultural related projects	4.44	.63	258	2	3.17	1.25	258	3
Provide officer training for 4-H officers	4.44	.60	255	2	3.11	1.31	256	4
Organize 4-H clubs and encourage youth activities	4.44	.65	257	2	3.29	1.23	259	1
Recruit and train volunteer 4-H leaders	4.43	.65	257	5	3.08	1.23	258	5
Organize 4-H contests	4.41	.59	257	6	3.21	1.27	258	2
Obtain parental interest, cooperation, and involvement in 4-H activities	4.40	.69	258	7	2.93	1.23	259	7
Assist in soliciting contributions for 4-H programs	4.29	.70	256	8	2.69	1.22	257	8

Table 12. Continued

Role/task	Importance Mean	S.D.	N	Rank	Performance Mean	S.D.	N	Rank
Evaluation role								
Apply research findings when making recommendations to farmers	4.67	.55	266	1	3.78	.97	265	1
Evaluate the crop loss due to drought, flooding, disease, and insect infestation and other natural calamities	4.65	.54	266	2	3.67	1.07	266	3
Evaluate the crop production situation	4.64	.50	266	3	3.69	.99	266	2
Assess farmers' problems and needs	4.57	.59	262	4	3.29	1.16	263	5
Keep up-to-date with research findings	4.51	.58	266	5	3.17	1.17	265	7
Evaluate the performance of AAs where applicable	4.45	.64	265	6	3.57	1.10	265	4
Evaluate progress and development of 4-H members	4.41	.60	261	7	2.90	1.22	257	13
Evaluate the impact on farmers due to change in farm production, market price, and farming techniques	4.38	.71	266	8	3.00	1.12	265	12
Evaluate results of extension events or activities	4.38	.67	266	8	3.27	1.17	266	6
Evaluate the effectiveness of extension programs	4.37	.69	265	10	3.11	1.17	266	8
Make qualitative assessment of overall accomplishments	4.36	.66	264	11	3.02	1.05	264	11
Interpret the implications of the accomplishments	4.36	.64	263	12	3.04	1.10	264	10
Identify problems requiring additional research	4.34	.74	265	13	2.77	1.15	265	15

Table 12. Continued

Role/task	Importance Mean	S.D.	N	Rank	Performance Mean	S.D.	N	Rank
Evaluate one's own performance as an extension worker	4.24	.84	265	14	2.99	1.14	262	14
Make quantitative assessment of overall accomplishment	4.22	.64	263	15	3.11	1.03	264	8
Professional development role								
Attend meeting regularly at ADO office	4.79	.50	263	1	4.50	.70	262	1
Maintain professional competency through inservice	4.50	.63	263	2	3.31	1.08	261	2
Participate in professional activities	4.39	.63	258	3	3.25	1.17	260	3
Maintain professional philosophy	4.38	.66	263	4	3.20	1.15	263	4
Develop a plan for professional development	4.32	.74	261	5	2.82	1.17	260	6
Identify opportunities for professional involvement	4.27	0.71	262	6	2.96	1.08	262	5

low means for performance. The tasks within each role had less variability for importance than for performance; most of the tasks had standard deviations of less than .70 for importance, whereas they had standard deviations of over 1.0 for performance. The researcher used the means to rank the tasks for importance and performance.

The tasks ranked first, second, and third highest for importance in the "program determination" role as indicated by their means were, in order, "determine extension program needs," "develop a calendar of operation," and "establish program priorities." These tasks, however, ranked second, first, and fourth highest, respectively, for performance as indicated by their means.

A wider gap of ranking between importance and performance was observed for tasks in the "program strategy role." The highest ranked task for importance, "developing working relationships with farmers," ranked third highest for performance. The second highest ranked task for importance, "prepare village Panchayat profile," ranked eighth highest for performance. Likewise, the third highest ranked task for importance, "report activities and progress periodically to supervisors," ranked first for performance. Interestingly, the thirteenth highest ranked task for importance, "become acquainted with influentials in the area," ranked fourth for performance.

In the "program implementation" role, the first, second, and third highest ranked tasks for importance as indicated by their means were "select progressive farmers to conduct trials and demonstration," "promote programs to increase production in such major crops as rice, maize, and

wheat," and "accomplish overall goals set by the ADO," respectively. These tasks ranked second, first, and third highest, respectively, for performance, indicating a narrow gap in perceptions between importance and performance of tasks in this role.

As indicated by their means, "conduct demonstrations," "conduct group discussions with farmers," and "organize field days and exhibitions" ranked first, second, and third highest tasks for importance in the "education" role of JTAs. The first and second ranked tasks for importance also ranked first and second for performance in that order. However, the third highest ranked task for importance ranked fourth for performance.

As might have been anticipated, a very wide disparity existed between the two types of ranking of tasks by their respective means under "special programs for female farmers" and "special programs for rural youth" roles. The three tasks ranked highest for importance under the "special programs for female farmers" role were "encourage and involve female farmers in such activities as farmers' meetings, trainings, and field trips," "provide agricultural and home economic information to female farmers," and "establish program priorities geared to the needs of female farmers." The task ranked first for importance also ranked first for performance. However, the second and third highest ranked tasks for importance ranked sixth and fourth highest, respectively, for performance. Interestingly, the second and third highest ranked tasks for performance, "encourage and involve young women in rural youth programs" and "become acquainted with

female farmers," respectively, ranked fourth and sixth highest, respectively, for importance.

In the case of the "special programs for rural youth" role, the highest ranked task for importance, "develop a 4-H plan of work," ranked sixth highest for performance. Three tasks that received the same mean value (4.44) ranked second highest for importance. These tasks, "involve 4-H members in agricultural related projects," "provide officer training for 4-H officers," and "organize 4-H clubs and encourage youth activities," however, ranked differently for performance. They ranked third, fourth, and first, respectively, for performance.

The three highest ranked tasks for importance in the "evaluation" role also were the three highest ranked tasks for performance, as indicated by their respective means. However, a slight difference was observed in the ranking; the second and third highest ranked tasks for importance ranked third and second highest, respectively, for performance.

The least disparity in ranking by means was observed for the importance and performance of tasks in the "professional development" role. "Attending meeting regularly at ADO office," "maintain professional competency through inservice," and "participate in professional activities" ranked first, second, and third for both importance and performance.

Hypothesis Testing

The following hypotheses were tested, and the results are presented in this section.

HO 1: There is no significant difference in the perceptions of JTAs, ADOs, and the administrators for the importance and performance of JTAs' roles.

HO 2: There is no significant difference in the perceptions of JTAs and ADOs in the two geographic regions for the importance and performance of JTAs' roles.

HO 3: There is no significant difference in the perceptions of ADOs in the five developmental regions for the importance and performance of JTAs' roles.

HO 4: There is no significant difference in the perceptions of JTAs in the five developmental regions for the importance and performance of JTAs' roles.

HO 5: There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs, ADOs, and the administrators.

HO 6: There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the two geographic regions.

HO 7: There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the five developmental regions.

The tasks of JTAs were categorized under eight broad roles: (1) program determination, (2) program strategy, (3) program implementation, (4) education, (5) special programs for female farmers, (6) special

programs for rural youth, (7) evaluation, and (8) professional development. Composite means were computed for the eight roles, both in terms of importance and performance by JTAs.

One-way analysis of variance was utilized to test for significant differences in the perceptions (as indicated by group means) of various groups of extension personnel for both the importance of JTAs' roles and performance of those roles. The Scheffé test was used to locate the source of differences in the perceptions when significance at the .05 level was observed.

The paired t-test was utilized to analyze differences between the perceptions of each group of extension personnel for the importance of JTAs' role and performance of those roles. In other words, the paired t-test was utilized to determine if a significant difference existed between the importance of JTAs' roles and performance of those roles as perceived by each group of extension personnel. In comparing the two perceptions, the analysis assumed that the unit of measurement on both scales was equal and on an interval level.

Hypothesis one

> There is no significant difference in the perceptions of JTAs, ADOs, and the administrators for the importance and performance of JTAs' roles.

Importance of roles The outcomes of analysis of variance on the perceptions of JTAs, ADOs, and administrators for the importance of JTAs' roles are presented in Table 13. Significant differences were found in the perceptions of the hierarchical groups of extension personnel for the

Table 13. Means, standard deviations, and F-values of importance of JTAs' roles by JTAs, ADOs, and administrators

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.	Group 3[c] N	Group 3[c] Mean S.D.	F-value	F-prob.
Program determination	17	4.38 .45	70	4.31 .38	182	4.44 .42	2.48	.09
Program strategy	17	4.55 .34	70	4.57 .35	182	4.55 .30	1.02	.36
Program implementation	17	4.50 .35	70	4.51 .33	182	4.62 .31	3.60*	.03
Education	17	4.34 .36	69	4.40 .40	182	4.50 .41	1.11	.33
Special programs for female farmers	17	4.12 .51	69	4.19 .52	182	4.40 .47	3.48*	.03
Special programs for rural youth	17	4.39 .45	65	4.27 .54	178	4.50 .52	3.16*	.04
Evaluation	17	4.37 .48	70	4.33 .43	181	4.48 .40	3.25*	.04
Professional development	17	4.40 .56	69	4.30 .50	177	4.50 .40	4.86**	.01
Composite	17	4.39 .36	70	4.35 .31	182	4.48 .32	4.37**	.01

[a]Group 1 = Administrators.

[b]Group 2 = ADOs.

[c]Group 3 = JTAs.

*Significant at α = .05 level.

**Significant at α = .01 level.

importance of five of the eight roles and the composite. A highly significant difference (.01 level) was observed in the perceptions for the importance of the "professional development" role. The Scheffé test revealed that difference existed between the perceptions of JTAs and ADOs. The perceptions of JTAs were higher than the perceptions of ADOs for the importance of the "professional development" role.

Significant differences (.05 level) existed in the perceptions of JTAs, ADOs, and administrators for the importance of four other roles: "program implementation," "special programs for female farmers," "special programs for rural youth," and "evaluation." The Scheffé test indicated that differences existed between the perceptions of JTAs and ADOs for the importance of these roles. The perceptions of JTAs were significantly higher than the perceptions of ADOs. At this level of significance, differences did not exist between the perceptions of JTAs and the administrators or between the perceptions of ADOs and the administrators for the importance of these four roles.

The one-way analysis of variance on the perceptions of JTAs, ADOs, and administrators for the importance of the composite role yielded a significant difference (.01 level). The Scheffé test revealed that the difference existed between the perceptions of JTAs and ADOs; the perception of JTAs was significantly higher than that of ADOs for the importance of the composite role. The perception of administrators, however, did not differ significantly either with the perception of JTAs or with the perception of ADOs for the importance of the composite role at the .05 level of significance.

The analysis of variance did not yield any significant differences at the .05 level in the perceptions of the hierarchical groups for the importance of the "program determination," "program strategy," and "education" roles.

Performance of roles More significant differences were observed in the perceptions of the JTAs, ADOs, and administrators for the performance than for the importance of roles. The analysis of variance yielded significant F-values for the perceptions of extension personnel for the performance of six of the eight roles. Differences existed at the .01 level of significance. The outcomes of the analysis are shown in Table 14.

The Scheffé test revealed that the perceptions of JTAs differed significantly (.01 level) with the perceptions of both ADOs and the administrators for the performance of "program strategy," "education," "evaluation," and "professional development" roles. As one might anticipate, perceptions of JTAs were significantly higher than that of either the ADOs or the administrators for the performance of these roles. Differences also existed between the perceptions of ADOs and the administrators. At the .05 level of significance, perceptions of ADOs differed from the perceptions of administrators for the performance of "program strategy," "education," "evaluation," and "professional development" roles. The perceptions of ADOs were significantly higher than that of the administrators.

The fifth significant difference (.01 level) in the perceptions of the JTAs, ADOs, and the administrators was for the performance of the "program

Table 14. Means, standard deviations, and F-values of performance of JTAs' roles by JTAs, ADOs, and administrators

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.	Group 3[c] N	Group 3[c] Mean S.D.	F-value	F-prob.
Program determination	17	2.74 .72	70	3.01 .84	182	3.25 .79	4.65**	.01
Program strategy	17	2.84 .47	70	3.30 .64	182	3.66 .61	19.17*	.00
Program implementation	17	2.96 .57	70	3.54 .65	182	3.77 .62	14.43**	.00
Education	17	2.80 .64	69	3.26 .66	182	3.57 .62	15.39**	.00
Special programs for female farmers	17	2.34 .56	69	2.58 .90	182	2.67 .81	1.36	.26
Special programs for rural youth	17	2.93 .91	66	3.12 .98	178	3.02 1.12	.27	.76
Evaluation	17	2.43 .55	70	2.96 .80	181	3.41 .71	20.39**	.00
Professional development	17	2.57 .75	69	3.15 .74	177	3.49 .76	14.63**	.00
Composite	17	4.39 .36	70	4.35 .31	182	4.48 .31	4.37**	.01

[a]Group 1 = Administrators.

[b]Group 2 = ADOs.

[c]Group 3 = JTAs.

*Significant at α = .05 level.

**Significant at α = .01 level.

implementation" role. The Scheffé test indicated that perception of the administrators differed with the perceptions of both the JTAs and ADOs. The perception of administrators was significantly lower than that of either the JTAs or the ADOs for the performance of the "program implementation" role.

The sixth significant difference (.01 level) in the perceptions of this category of extension personnel was for the performance of the "program determination" role. The Scheffé test revealed that the difference existed between the perceptions of JTAs and the administrators. The perceptions of JTAs were significantly higher than that of the administrators for the performance of this role.

A highly significant difference (.01 level) was observed in the perceptions for the performance of the composite role. The Scheffé test revealed that the difference existed between the perceptions of JTAs and the administrators. As one might anticipate, the perceptions of the administrators were lower than that of the JTAs for the performance of the composite role. The Scheffé test also revealed the differences between the perceptions of JTAs and ADOs and between the perceptions of ADOs and the administrators at the .05 level of significance for the perception of the composite role. The perceptions of ADOs were significantly lower than that of the JTAs, and the perceptions of administrators were significantly lower than that of the ADOs for the performance of the composite role.

Significant differences were observed in the perceptions of JTAs, ADOs, and administrators for the importance of five of the eight roles and the composite. Significant differences were also observed in the

perceptions of this hierarchical group for the performance of six roles and the composite. Therefore, the hypothesis that there is no significant difference in the perceptions of JTAs, ADOs, and the administrators for the importance and performance of JTAs' roles was rejected.

Hypothesis two

> There is no significant difference in the perceptions of JTAs and ADOs in the two geographic regions for the importance and performance of JTAs' roles.

Extension personnel, especially JTAs and ADOs, work in two distinct geographical areas: the mountains in the northern part of the country and the plains of the Terai in the south. These two geographic regions differ sharply from each other not only in geoecology and socioeconomic conditions of people but also in the extension delivery systems. This hypothesis was put forward to see if significant differences existed in the perceptions of the extension personnel working in these two geographic regions for the importance and performance of JTAs' roles.

Extension personnel were categorized into four groups: (1) ADOs in the mountain region, (2) ADOs in the Terai region, (3) JTAs in the mountain region, and (4) JTAs in the Terai region. Administrators were not included in this analysis because they are centrally located and represented both geographic conditions. One-way analysis of variance was employed to determine if significant differences existed in the perceptions of these four groups of extension personnel for the importance and performance of roles.

Importance of roles The outcomes of analysis of variance on the perceptions of extension personnel grouped by geographic regions for the importance of JTAs' roles are presented in Table 15. The results indicated significant differences in the perceptions of the extension personnel for the importance of four of the eight roles and the composite. A significant difference (.01 level) was observed in the perceptions for the importance of the "program implementation" role. The Scheffé test revealed that the perceptions of ADOs in the mountain region differed significantly with the perceptions of JTAs in the same geographic region for the importance of this role. The perceptions of ADOs was significantly lower than that of the JTAs. Another significant difference (.01 level) was observed in the perceptions for the importance of the "professional development" role. The Scheffé test showed that the perception of ADOs in the mountain region differed significantly from the perceptions of two other groups, JTAs in the mountain region and JTAs in the Terai region, for the importance of this role. The perceptions of ADOs in the mountain region were significantly lower than that of the two groups of JTAs for the importance of this role. Two other roles where significant differences were observed (.05 level) in the perceptions of ADOs and JTAs in the two geographic regions for the importance were the "special programs for rural youth," and "evaluation." The Scheffé test revealed that the perceptions of ADOs in the mountain region differed significantly with the perceptions of JTAs in the same geographic region for the importance of the "evaluation" role. Surprisingly, perceptions of ADOs were significantly lower than that of the JTAs for the importance of

Table 15. Means, standard deviations, and F-values of importance of JTAs' roles by ADOs and JTAs in the two geographic regions

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.	Group 3[c] N	Group 3[c] Mean S.D.	Group 4[d] N	Group 4[d] Mean S.D.	F-value	F-prob.
Program determination	51	4.31 .38	19	4.31 .37	111	4.45 .41	71	4.42 .43	1.71	.17
Program strategy	51	4.46 .35	19	4.63 .31	111	4.57 .28	71	4.56 .33	2.05	.11
Program implementation	51	4.46 .33	19	4.65 .31	111	4.62 .30	71	4.62 .32	3.61**	.01
Education	50	4.35 .42	19	4.49 .33	111	4.46 .42	71	4.44 .41	1.06	.36
Special programs for female farmers	50	4.18 .53	19	4.21 .53	111	4.38 .46	71	4.31 .49	2.11	.10
Special programs for rural youth	46	4.21 .57	19	4.40 .44	107	4.42 .56	71	4.52 .43	3.15*	.03
Evaluation	51	4.29 .45	19	4.45 .38	110	4.48 .39	71	4.47 .42	2.82*	.04
Professional development	51	4.23 .53	18	4.53 .34	108	4.51 .41	69	4.48 .40	5.61**	.00
Composite	51	4.31 .32	19	4.46 .28	111	4.48 .31	71	4.48 .33	3.83**	.01

[a]Group 1 = ADOs in the mountain region.

[b]Group 2 = ADOs in the Terai region.

[c]Group 3 = JTAs in the mountain region.

[d]Group 4 = JTAs in the Terai region.

*Significant at α = .05 level.

**Significant at α = .01 level.

this role. The perceptions of this group of ADOs also differed with the perceptions of JTAs in the Terai region for the importance of the "special programs for rural youth" role. In this case also, perceptions of ADOs were significantly lower than that of the JTAs in the Terai region.

A significant difference (.01 level) in the perceptions for the importance of the composite role was also observed. The Scheffé test indicated that perceptions of ADOs in the mountain region differed with the perceptions of JTAs in both the mountain and the Terai regions. The perceptions of ADOs in the mountain region were significantly lower than that of the JTAs in both the geographic regions for the importance of the composite role.

Performance of roles Table 16 shows the results of analysis of variance on the perceptions of ADOs and JTAs grouped by the geographic regions for the performance of JTAs' roles. Significant differences (.05 level) did not exist in the perceptions of the four groups of extension personnel for the performance of "program determination" and "special programs for female farmers." However, significant differences in the perceptions did exist for the performance of the remaining six of the eight roles.

Significant differences (.01 level) in the perceptions of ADOs and JTAs grouped by geographic regions were observed for the performance of five of the eight roles: "program strategy," "education," "evaluation," "special programs for rural youth," and "professional development." The Scheffé test revealed that the perceptions of the ADOs in the mountain region differed from the perceptions of JTAs both in the mountain and the

Table 16. Means, standard deviations, and F-values of performance of JTAs' roles by ADOs and JTAs in the two geographic regions

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.	Group 3[c] N	Group 3[c] Mean S.D.	Group 4[d] N	Group 4[d] Mean S.D.	F-value	F-prob.
Program determination	51	3.06 .86	19	2.89 .82	111	3.21 .81	71	3.32 .75	1.92	.13
Program strategy	51	3.23 .61	19	3.51 .67	111	3.62 .63	71	3.73 .60	6.91**	.00
Program implementation	51	3.48 .62	19	3.71 .70	111	3.74 .60	71	3.80 .66	2.88*	.04
Education	50	3.25 .63	19	3.27 .76	111	3.52 .58	71	3.65 .68	4.57**	.01
Special programs for female farmers	50	2.57 .91	19	2.60 .91	111	2.54 .77	71	2.86 .84	2.29	.08
Special programs for rural youth	47	2.98 1.00	19	3.46 .81	107	2.67 1.12	71	3.56 .89	12.03**	.00
Evaluation	51	2.93 .79	19	3.05 .87	110	3.35 .69	71	3.50 .73	6.85**	.00
Professional development	51	3.12 .72	18	3.22 .82	108	3.45 .77	69	3.54 .73	3.69**	.01
Composite	51	3.09 .60	19	3.22 .71	111	3.27 .54	71	3.49 .59	5.11**	.00

[a]Group 1 = ADOs in the mountain region.

[b]Group 2 = ADOs in the Terai region.

[c]Group 3 = JTAs in the mountain region.

[d]Group 4 = JTAs in the Terai region.

*Significant at α = .05 level.

**Significant at α = .01 level.

Terai regions for the performance of the "program strategy" and "evaluation" roles. The perceptions of ADOs in the mountain region were significantly lower than that of both the groups of JTAs for the performance of these two roles. The perceptions of ADOs in the mountain region also differed from the perceptions of JTAs in the Terai region for the performance of the "education" and "special programs for rural youth" roles. Comparison of the perceptions indicated that ADOs in the mountain region rated performance at a significantly lower level than did the JTAs in the Terai region.

Differences were also observed in the perceptions of the ADOs and JTAs for the performance of "special programs for rural youth" role among other groups of JTAs and ADOs. The perceptions of JTAs in the mountain region differed significantly from the perceptions of both the JTAs and ADOs in the Terai region for the performance of this role. The perceptions of JTAs in the mountain region were significantly lower than that of both the JTAs and ADOs in the Terai region.

The fifth significant difference (.01 level) was observed in the perceptions of the four groups of extension personnel for the performance of the "professional development" role. The Scheffé test indicated a significant difference between the perceptions of ADOs in the mountain region and JTAs in the Terai region. The perceptions of this group of JTAs were significantly higher than that of the ADOs.

The last significant difference was observed in the perceptions for the performance of the "program implementation" role. At the .05 level of significance, a difference existed between the perceptions of ADOs in the

mountain region and JTAs in both the mountain and the Terai regions. The perceptions of JTAs in both the geographic regions were significantly higher than that of the ADOs in the mountain region.

A highly significant difference (.01 level) in the perceptions of the extension personnel grouped by the geographic regions was also observed for the performance of the composite role. The Scheffé test revealed that differences existed between the perceptions of ADOs in the mountain region and JTAs in the Terai region. The perceptions of JTAs were significantly higher than that of the ADOs for the performance of the composite role.

Significant differences were observed in the perceptions of the JTAs and ADOs in the two geographic regions for the importance of four roles and the composite. Significant differences were also observed in the perceptions of these four groups of extension personnel for the performance of six roles and the composite. Therefore, the hypothesis that there is no significant difference in the perceptions of JTAs and ADOs in the two geographic regions for the importance and performance of JTAs' role was rejected.

Hypothesis three

> There is no significant difference in the perceptions of ADOs in the five developmental regions for the importance and performance of JTAs' roles.

The county is administratively divided into five developmental regions that run from east to west. ADOs were grouped according to the developmental regions, and their perceptions for the importance and

performance of JTAs' roles were compared utilizing the one-way analysis of variance.

Importance of roles Table 17 shows the outcomes of analysis of variance on the perceptions of the five groups of ADOs for the importance of JTAs' roles. Results do not indicate any significant difference (.05 level) in the perceptions of the ADOs for the importance of JTAs' roles.

Performance of roles Interestingly, except for one role, differences did not exist at the .05 level of significance in the perceptions of the five groups of ADOs for the performance of JTAs' roles (see Table 18). The analysis of variance on the perceptions yielded a significant difference (.05 level) for the performance of "special programs for rural youth" role. The post-hoc test indicated that the difference was between the perceptions of ADOs in the Eastern Development Region and the Far-Western Development Region. Other than this difference, the ADOs serving in five different development regions tended to hold similar perceptions for the performance of JTAs' roles.

Since only one significant difference in the perceptions of the five groups of ADOs was observed for the performance of JTAs' roles, the data failed to reject hypothesis three.

Hypothesis four

> There is no significant difference in the perceptions of JTAs in the five developmental regions for the importance and performance of JTAs' roles.

Importance of roles JTAs were also divided into groups according to the five developmental regions. The perceptions of five groups of JTAs

Table 17. Means, standard deviations, and F-values of importance of JTAs' roles by ADOs in the five developmental regions

Role	Group 1[a] N	Group 1[a] Mean / S.D.	Group 2[b] N	Group 2[b] Mean / S.D.
Program determination	16	4.23 / .34	18	4.33 / .40
Program strategy	16	4.55 / .34	18	4.40 / .44
Program implementation	16	4.63 / .29	18	4.47 / .40
Education	16	4.46 / .30	18	4.32 / .50
Special programs for female farmers	16	4.19 / .34	18	4.12 / .64
Special programs for rural youth	16	4.16 / .73	17	4.22 / .40
Evaluation	16	4.38 / .36	18	4.32 / .48
Professional development	16	4.35 / .50	18	4.27 / .51
Composite	16	2.77 / .56	18	3.25 / .60

[a]Group 1 = ADOs in the Eastern Development Region.

[b]Group 2 = ADOs in the Central Development Region.

[c]Group 3 = ADOs in the Western Development Region.

[d]Group 4 = ADOs in the Mid-Western Development Region.

[e]Group 5 = ADOs in the Far-Western Development Region.

Group 3		Group 4		Group 5			
N	Mean S.D.	N	Mean S.D.	N	Mean S.D.	F-value	F-prob.
16	4.28 .49	12	4.30 .28	8	4.36 .35	.08	.98
16	4.64 .30	12	4.51 .28	8	4.36 .29	1.44	.23
16	4.54 .33	12	4.40 .25	8	4.50 .35	.86	.49
16	4.56 .35	11	4.13 .37	8	4.40 .47	2.32	.07
16	4.26 .53	11	4.14 .44	8	4.28 .70	.23	.92
16	4.42 .37	10	4.35 .54	6	4.15 .73	.63	.64
16	4.36 .45	12	4.33 .36	8	4.23 .60	.17	.95
16	4.34 .45	10	4.29 .53	7	4.19 .67	.16	.96
16	3.27 .69	12	3.13 .50	8	3.26 .77	1.85	.13

Table 18. Means, standard deviations, and F-values of performance of JTAs' roles by ADOs in the five developmental regions

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.
Program determination	16	2.86 .82	18	3.21 .76
Program strategy	16	2.92 .58	18	3.39 .54
Program implementation	16	3.27 .78	18	3.59 .54
Education	16	2.89 .79	18	3.39 .55
Special programs for female farmers	16	2.06 .76	18	2.69 .93
Special programs for rural youth	16	2.63 .82	17	3.32 .82
Evaluation	16	2.55 .72	18	3.10 .79
Professional development	16	2.94 .68	18	3.29 .64
Composite	16	2.77 .56	18	3.25 .56

[a]Group 1 = ADOs in the Eastern Development Region.

[b]Group 2 = ADOs in the Central Development Region.

[c]Group 3 = ADOs in the Western Development Region.

[d]Group 4 = ADOs in the Mid-Western Development Region.

[e]Group 5 = ADOs in the Far-Western Development Region.

*Significant at $\alpha = .05$ level.

Group 3[c]		Group 4[d]		Group 5[e]			
N	Mean S.D.	N	Mean S.D.	N	Mean S.D.	F-value	F-prob.
16	3.09 .92	12	2.70 .72	8	3.21 1.08	.91	.46
16	3.41 .58	12	3.37 .71	8	3.60 .84	2.21	.08
16	3.55 .59	12	3.64 .52	8	3.83 .81	1.23	.31
16	3.39 .73	11	3.37 .45	8	3.29 .62	1.68	.17
16	2.79 .90	11	2.69 .83	8	2.80 .98	1.86	.13
16	3.67 .65	11	2.97 1.11	6	[illegible].63 1.50	3.34*	.02
16	3.05 .85	12	3.07 .75	8	3.16 .89	1.42	.24
16	3.22 .82	12	3.11 .79	7	3.12 .96	.52	.72
16	3.27 .69	12	3.13 .50	8	3.26 .77	1.85	.13

were then compared for the importance and performance of JTAs' roles utilizing the one-way analysis of variance. Table 19 shows the results of the comparison. One-way analysis of variance on the perceptions for the importance of roles yielded a significant difference (.01 level) for only one role. As shown in Table 19, a significant difference was observed in the perceptions of the five groups of JTAs for the importance of the "program determination" role only. The Scheffé test revealed that the perceptions of JTAs in the Eastern Development Region differed with the perceptions of JTAs in both the Western Development Region and the Far-Western Development Region.

Performance of roles Table 20 reveals that JTAs across the five developmental regions held differing perceptions for the level of performance of their roles. Analysis of variance on the perceptions of JTAs in the five developmental regions yielded significant differences (.01 level) for three of the eight roles. Significant differences in the perceptions were observed for the performance of the "program strategy," "education," and "special programs for female farmers" roles. A significant difference (.01 level) in the perceptions was also observed for the performance of the composite role. The Scheffé test revealed that the perceptions of JTAs in the Central Development Region differed with the perceptions of JTAs in the Far-Western Development Region for the performance of these three roles and the composite. Unexpectedly, as the group mean indicated, the perceptions of JTAs in the Far-Western Development Region were significantly higher than the perceptions of the JTAs in the Central Development Region for the performance of these roles.

Table 19. Means, standard deviations, and F-values of importance of JTAs' roles by JTAs in the five developmental regions

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.
Program determination	37	4.21 .56	35	4.44 .38
Program strategy	37	4.54 .28	35	4.53 .35
Program implementation	37	4.57 .27	35	4.62 .30
Education	37	4.39 .43	35	4.52 .39
Special programs for female farmers	37	4.37 .49	35	4.30 .47
Special programs for rural youth	36	4.49 .41	34	4.53 .37
Evaluation	37	4.44 .39	34	4.53 .39
Professional development	36	4.46 .36	34	4.47 .37
Composite	37	4.43 .31	35	4.49 .29

[a]Group 1 = JTAs in the Eastern Development Region.

[b]Group 2 = JTAs in the Central Development Region.

[c]Group 3 = JTAs in the Western Development Region.

[d]Group 4 = JTAs in the Mid-Western Development Region.

[e]Group 5 = JTAs in the Far-Western Development Region.

**Significant at α = .01 level.

Group 3[c]		Group 4[d]		Group 5[e]			
N	Mean S.D.	N	Mean S.D.	N	Mean S.D.	F-value	F-prob.
40	4.55 .30	39	4.46 .37	31	4.51 .39	3.82**	.01
40	4.59 .27	39	4.57 .31	31	4.62 .26	.55	.70
40	4.67 .30	39	4.63 .34	31	4.60 .33	.53	.71
40	4.47 .43	39	4.42 .41	31	4.49 .42	.59	.66
40	4.36 .47	39	4.35 .49	31	4.38 .43	.13	.97
40	4.53 .46	38	4.28 .72	30	4.46 .51	1.59	.18
40	4.55 .35	39	4.43 .47	31	4.43 .42	.81	.52
40	4.64 .33	37	4.40 .50	30	4.51 .42	2.08	.08
40	4.55 .31	39	4.44 .35	31	4.50 .33	.79	.53

Table 20. Means, standard deviations, and F-values of performance of JTAs' roles by JTAs in the five developmental regions

Role	Group 1[a] N	Group 1[a] Mean S.D.	Group 2[b] N	Group 2[b] Mean S.D.
Program determination	37	3.23 .96	35	3.05 .63
Program strategy	37	3.72 .68	35	3.37 .67
Program implementation	37	3.70 .76	35	3.50 .75
Education	37	3.52 .11	35	3.28 .70
Special programs for female farmers	37	2.70 .99	35	2.36 .74
Special programs for rural youth	36	2.75 1.12	34	3.10 1.00
Evaluation	37	3.37 .78	34	3.24 .82
Professional development	36	3.52 .83	34	3.35 .76
Composite	37	3.32 .68	35	3.16 .61

[a]Group 1 = JTAs in the Eastern Development Region.

[b]Group 2 = JTAs in the Central Development Region.

[c]Group 3 = JTAs in the Western Development Region.

[d]Group 4 = JTAs in the Mid-Western Development Region.

[e]Group 5 = JTAs in the Far-Western Development Region.

*Significant at α = .05 level.

**Significant at α = .01 level.

Group 3[c]		Group 4[d]		Group 5[e]			
N	Mean S.D.	N	Mean S.D.	N	Mean S.D.	F-value	F-prob.
40	3.31 .72	39	3.16 .79	31	3.54 .77	1.83	.13
40	3.72 .49	39	3.63 .55	31	3.89 .63	3.46**	.01
40	3.90 .45	39	3.84 .49	31	3.87 .62	2.59*	.04
40	3.61 .50	39	3.63 .61	31	3.82 .55	3.61**	.01
40	2.75 .67	39	2.55 .70	31	3.03 .85	3.25**	.01
40	3.36 1.08	38	2.69 1.24	30	3.27 1.03	2.79*	.03
40	3.56 .57	39	3.29 .71	31	3.60 .66	1.82	.13
40	3.72 .63	37	3.22 .82	30	3.62 .64	2.71*	.03
40	3.49 .45	39	3.26 .46	31	3.59 .57	3.39**	.01

The analysis of variance also yielded significant differences (.05 level) in the perceptions of JTAs in the five developmental regions for the performance of three other roles: "program implementation," "special programs for rural youth," and "professional development." The post-hoc test (Scheffé) revealed that perceptions of JTAs in the Central Development Region differed with the perceptions of JTAs in the Western Development Region for the performance of the "program implementation" and "special programs for rural youth" roles, whereas the perceptions of JTAs in the Western Development Region differed with the perceptions of JTAs in the Mid-Western Development Region for the performance of the "professional development" role. The perceptions of JTAs in the Western Development Region were significantly higher than the perceptions of JTAs in the Central Development Region for the performance of the "program implementation" and "special programs for rural youth" roles. The group mean also indicated that the perceptions of JTAs in the Western Development Region were significantly higher than the perceptions of JTAs in the Mid-Western Development Region for the performance of the "professional development" role.

Since significant differences were observed in the perceptions for the performance of six of the eight roles and the composite, the portion of hypothesis four pertaining to the performance of roles was rejected. The data failed to reject the portion of the hypothesis pertaining to the importance of roles.

Hypothesis five

> There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs, ADOs, and the administrators.

The hypothesis that there is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs, ADOs, and administrators was rejected.

The comparison between the perceptions of administrators for the importance of JTAs' roles and the performance of those roles is shown in Table 21. T-tests were performed to see if significant differences existed between the perceptions of administrators for the importance of JTAs' roles and the performance of those roles. The t-values revealed that a highly significant difference (.01 level) existed between the two perceptions for each role and the composite. The perceptions of administrators were significantly higher for the importance of JTAs' roles than for the performance of those roles.

Table 22 presents the comparison between the perceptions of ADOs for the importance of JTAs' roles and the performance of those roles. The t-values revealed that a highly significant difference (.01 level) existed between the two perceptions of ADOs for each role and the composite. The perceptions of ADOs were significantly higher for the importance of JTAs' roles than for the performance of those roles.

The perceptions of JTAs were also compared to determine if significant differences existed between importance and performance of their roles. The results in Table 23 indicated that highly significant differences (.01 level) existed between the two perceptions of JTAs. Like the

Table 21. A comparison between importance and performance of JTAs' roles as perceived by administrators

Role	Importance Mean / S.D.	Performance Mean / S.D.	t-value	t-prob.
Program determination	4.38 / .45	2.78 / .72	9.56	.00
Program strategy	4.55 / .34	2.85 / .47	16.01	.00
Program implementation	4.50 / .35	2.96 / .57	12.09	.00
Education	4.34 / .36	2.79 / .64	10.07	.00
Special programs for female farmers	4.17 / .51	2.33 / .56	10.64	.00
Special programs for rural youth	4.39 / .45	2.92 / .91	7.27	.00
Evaluation	4.37 / .48	2.43 / .55	12.11	.00
Professional development	4.39 / .56	2.57 / .75	9.13	.00
Composite	4.39 / .36	2.70 / .51	12.65	.00

Table 22. A comparison between importance and performance of JTAs' roles as perceived by ADOs

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Program determination	70	4.31 .38	3.02 .85	13.02	.00
Program strategy	70	4.51 .35	3.31 .64	14.27	.00
Program implementation	70	4.52 .33	3.54 .65	12.28	.00
Education	69	4.39 .40	3.26 .66	13.51	.00
Special programs for female farmers	69	4.19 .52	2.58 .90	14.34	.00
Special programs for rural youth	65	4.27 .54	3.15 .95	10.07	.00
Evaluation	70	4.33 .43	2.96 .81	13.38	.00
Professional development	69	4.30 .50	3.15 .74	12.34	.00
Composite	70	4.35 .31	3.12 .63	15.99	.00

Table 23. A comparison between importance and performance of JTAs' roles as perceived by JTAs

Role	Number of cases	Importance Mean / S.D.	Performance Mean / S.D.	t-value	t-prob.
Program determination	182	4.44 / .42	3.25 / .79	19.55	.00
Program strategy	182	4.57 / .30	3.66 / .62	20.14	.00
Program implementation	182	4.62 / .31	3.77 / .63	17.93	.00
Education	182	4.46 / .41	3.57 / .62	18.81	.00
Special programs for female farmers	182	4.35 / .47	2.67 / .81	26.19	.00
Special programs for rural youth	178	4.46 / .52	3.03 / 1.12	16.70	.00
Evaluation	181	4.48 / .40	3.41 / .71	19.49	.00
Professional development	177	4.50 / .40	3.49 / .76	17.45	.00
Composite	182	4.48 / .32	3.36 / .57	25.76	.00

administrators and the ADOs, the perceptions of JTAs were significantly higher for the importance of roles than the performance of those roles. Although JTAs perceived a higher level of performance of their roles than did ADOs or the administrators (Table 14), they also seemed to perceive that the roles had not been performed in accordance with their degree of importance.

Hypothesis six

> There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the two geographic regions.

T-tests were performed to analyze whether significant differences existed between the perceptions of ADOs in both the geographic regions for the importance of JTAs' roles and the performance of those roles. The results of the t-tests are shown in Table 24. The t-values indicated a highly significant difference (.01 level) between the two perceptions of ADOs both in the mountain and the Terai regions. The perceptions of ADOs in both the geographic regions were significantly higher for the importance of JTAs' roles than for the performance of those roles.

Tests for significant differences were also performed to analyze whether significant differences existed between the two perceptions of JTAs in the two geographic regions. The results of the t-tests are shown in Table 25. As the t-values indicated, a highly significant difference (.01 level) existed between the perceptions of each group of JTAs for the importance of roles and the performance of those roles. The perceptions

Table 24. A comparison between importance and performance of JTAs' roles as perceived by ADOs in the two geographic regions

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
ADOs in the Mountain Region					
Program determination	51	4.31 .38	3.06 .86	10.31	.00
Program strategy	51	4.46 .36	3.23 .62	12.00	.00
Program implementation	51	4.46 .33	4.48 .62	10.40	.00
Education	51	4.35 .42	3.25 .63	11.18	.00
Special programs for female farmers	50	4.18 .53	2.57 .90	11.81	.00
Special programs for rural youth	46	4.21 .57	3.02 .98	8.40	.00
Evaluation	51	4.29 .45	2.93 .79	11.08	.00
Professional development	51	4.23 .53	3.12 .72	10.01	.00
Composite	51	4.31 .32	3.09 .60	13.42	.00

Table 24. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
ADOs in the Terai Region					
Program determination	19	4.31 .37	2.89 .83	8.32	.00
Program strategy	19	4.63 .31	3.51 .67	7.74	.00
Program implementation	19	4.65 .32	3.71 .70	6.40	.00
Education	19	4.49 .34	3.27 .76	7.49	.00
Special programs for female farmers	19	4.21 .57	2.60 .91	8.06	.00
Special programs for rural youth	19	4.40 .44	3.46 .81	5.86	.00
Evaluation	19	4.45 .38	3.05 .87	7.39	.00
Professional development	18	4.53 .34	3.22 .82	7.34	.00
Composite	19	4.46 .28	3.22 .71	8.50	.00

Table 25. A comparison between importance and performance of JTAs' roles as perceived by JTAs in the two geographic regions

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
JTAs in the Mountain Region					
Program determination	111	4.45 .41	3.21 .81	15.50	.00
Program strategy	111	4.57 .28	3.62 .63	16.37	.00
Program implementation	111	4.62 .30	3.75 .60	14.46	.00
Education	111	4.46 .42	3.52 .58	16.70	.00
Special programs for female farmers	111	4.38 .46	2.54 .77	23.59	.00
Special programs for rural youth	107	4.42 .56	2.67 1.12	14.61	.00
Evaluation	110	4.48 .39	3.35 .69	16.09	.00
Professional development	108	4.57 .41	3.45 .77	13.69	.00
Composite	111	4.48 .31	3.27 .54	22.38	.00

Table 25. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
JTAs in the Terai Region					
Program determination	71	4.42 .43	3.32 .75	11.93	.00
Program strategy	71	4.56 .33	3.73 .60	11.83	.00
Program implementation	71	4.62 .32	3.80 .66	10.58	.00
Education	71	4.44 .41	3.65 .68	9.74	.00
Special programs for female farmers	71	4.32 .49	2.86 .84	13.63	.00
Special programs for rural youth	71	4.52 .44	3.56 .89	10.36	.00
Evaluation	71	4.47 .42	3.50 .74	11.17	.00
Professional development	69	4.48 .40	3.54 .73	10.86	.00
Composite	71	4.48 .33	3.49 .59	14.02	.00

of both groups of JTAs were significantly higher for the importance of JTAs' roles than for the performance of those roles.

Highly significant differences between the perceptions of each group of JTAs and the ADOs in the two geographic regions for the importance of JTAs' roles and performance of those roles were observed. Therefore, the hypothesis that there is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and the ADOs in the two geographic regions was rejected.

Hypothesis seven

> There is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the five developmental regions.

The hypothesis that there is no significant difference between the importance and the performance of JTAs' roles as perceived by JTAs and ADOs in the five developmental regions was also rejected.

The comparison between the perceptions of ADOs across the five developmental regions for the importance of JTAs' roles and the performance of those roles is shown in Table 26. T-tests were performed to see if significant differences existed between the perceptions of each of these groups of ADOs for the importance of JTAs' roles and the performance of those roles. The t-values revealed that a significant difference (.01 level) existed between the two perceptions for the composite role. The perceptions of each group of ADOs across the five developmental regions were significantly higher for the importance of JTAs' roles than for the performance of those roles.

Table 26. A comparison between importance and performance of JTAs' roles as perceived by ADOs in the five developmental regions

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Eastern Development Region					
Program determination	16	4.30 .34	2.86 .82	8.07	.00
Program strategy	16	4.55 .34	2.92 .58	10.38	.00
Program implementation	16	4.63 .29	3.27 .78	7.08	.00
Education	16	4.46 .30	2.89 .79	8.25	.00
Special programs for female farmers	16	4.19 .34	2.06 .76	10.65	.00
Special programs for rural youth	16	4.16 .73	2.63 .82	7.49	.00
Evaluation	16	4.38 .36	2.55 .72	8.60	.00
Professional development	16	4.35 .50	2.94 .68	8.65	.00
Composite	16	4.38 .26	2.77 .56	10.75	.00
Central Development Region					
Program determination	18	4.33 .40	3.21 .76	5.27	.00
Program strategy	18	4.41 .44	3.39 .54	6.82	.00
Program implementation	18	4.47 .40	3.59 .54	5.61	.00

Table 26. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Education	18	4.32 .45	3.39 .55	5.57	.00
Special programs for female farmers	18	4.12 .65	2.69 .93	5.49	.00
Special programs for rural youth	18	4.22 .40	3.32 .82	4.21	.00
Evaluation	18	4.32 .48	3.10 .79	5.38	.00
Professional development	18	4.28 .57	3.29 .64	5.50	.00
Composite	18	4.31 .40	3.25 .60	6.10	.00
Western Development Region					
Program determination	16	4.28 .49	3.09 .92	6.05	.00
Program strategy	16	4.64 .30	3.41 .55	8.35	.00
Program implementation	16	4.54 .33	3.55 .59	7.40	.00
Education	16	4.56 .35	3.39 .73	8.15	.00
Special programs for female farmers	16	4.26 .53	2.79 .90	8.11	.00
Special programs for rural youth	16	4.42 .37	3.67 .65	5.16	.00
Evaluation	16	4.36 .45	3.05 .85	6.87	.00

Table 26. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Professional development	16	4.34 .45	3.23 .82	5.07	.00
Composite	16	4.43 .30	3.27 .69	8.20	.00
Mid-Western Development Region					
Program determination	12	4.30 .28	2.70 .72	7.07	.00
Program strategy	12	4.51 .28	3.37 .71	5.53	.00
Program implementation	12	4.41 .25	3.64 .52	5.26	.00
Education	11	4.13 .37	3.37 .46	6.10	.00
Special programs for female farmers	11	4.14 .44	2.69 .83	4.70	.00
Special programs for rural youth	10	4.35 .54	3.16 .95	3.31	.00
Evaluation	12	4.33 .36	3.07 .75	6.04	.00
Professional development	12	4.29 .53	3.11 .79	5.12	.00
Composite	12	4.32 .23	3.13 .50	7.52	.00
Far-Western Development Region					
Program determination	8	4.36 .35	3.21 1.08	3.06	.02
Program strategy	8	4.36 .29	3.60 .84	2.46	.04

Table 26. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Program implementation	8	4.50 .35	3.83 .81	2.90	.02
Education	8	4.40 .47	3.29 .62	4.36	.00
Special programs for female farmers	8	4.28 .70	2.80 .98	4.99	.00
Special programs for rural youth	6	4.15 .73	2.63 1.50	3.54	.02
Evaluation	8	4.23 .60	3.16 .89	3.65	.01
Professional development	7	4.19 .66	3.12 .96	3.18	.02
Composite	8	4.32 .39	3.26 .77	4.82	.01

Likewise, Table 27 presents the comparison between the perceptions of each group of JTAs across the five developmental regions for the importance of their own roles and the performance of those roles. The t-values revealed that a highly significant difference (.01 level) existed between the two perceptions of each group of JTAs for each role and the composite. The perceptions of JTAs were significantly higher for the importance of roles than for the performance of those roles.

Summary

Slightly over two-thirds of JTAs were between 26 and 35 years of age, and 57% of ADOs and 58.8% of administrators were between 36 and 45 years of age. Over 50% of JTAs had been with extension service between 6 and 10 years, whereas the tenure of ADOs was widely and almost evenly distributed across the age categories.

An unexpectedly high number of JTAs (54.5%) reported having only a high school degree. The data indicated that JTAs were more likely to be employed in the same developmental and geographic region as their origin. The data also indicated that senior JTAs were more likely to be employed in the Terai region and the Eastern Development Region. The largest percentage of JTAs (33.5%) had their homes in the Western Development Region, whereas the lowest percentage (10.1%) had homes in the Far-Western Development Region.

The means and standard deviations of tasks on a scale of 1 to 5 ranged from 3.94 to 4.83 and .38 to .87, respectively, for importance, compared to 2.08 to 4.50 and .70 to 1.31, respectively, for performance.

Table 27. A comparison between importance and performance of JTAs' roles as perceived by JTAs in the five developmental regions

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Eastern Development Region					
Program determination	37	4.21 .56	3.23 .96	6.16	.00
Program strategy	37	4.54 .28	3.72 .68	7.63	.00
Program implementation	37	4.57 .27	3.70 .74	7.17	.00
Education	37	4.39 .43	3.52 .66	8.46	.00
Special programs for female farmers	37	4.37 .49	2.70 .99	10.23	.00
Special programs for rural youth	36	4.49 .41	2.75 1.12	8.81	.00
Evaluation	37	4.44 .39	3.37 .75	9.08	.00
Professional development	36	4.46 .36	3.52 .89	7.29	.00
Composite	37	4.43 .31	3.32 .68	10.42	.00
Central Development Region					
Program determination	35	4.44 .38	3.05 .63	9.80	.00
Program strategy	35	4.53 .35	3.37 .67	10.13	.00
Program implementation	35	4.62 .30	3.50 .75	8.63	.00

Table 27. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Education	35	4.52 .39	3.28 .70	10.42	.00
Special programs for female farmers	35	4.30 .47	2.36 .74	12.89	.00
Special programs for rural youth	34	4.53 .37	3.10 1.0	9.02	.00
Evaluation	34	4.53 .39	3.24 .82	7.96	.00
Professional development	34	4.47 .37	3.35 .76	7.99	.00
Composite	35	4.49 .29	3.16 .61	11.83	.00
Western Development Region					
Program determination	40	4.55 .30	3.31 .72	12.09	.00
Program strategy	40	4.59 .27	3.72 .49	12.05	.00
Program implementation	40	4.67 .30	3.91 .45	10.90	.00
Education	40	4.47 .43	3.61 .50	12.52	.00
Special programs for female farmers	40	4.36 .47	2.75 .67	16.53	.00
Special programs for rural youth	40	4.53 .46	3.36 1.08	7.39	.00
Evaluation	40	4.55 .35	3.56 .57	11.70	.00

Table 27. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Professional development	40	4.64 .33	3.72 .45	10.68	.00
Composite	40	4.55 .31	3.49 .45	18.44	.00
Mid-Western Development Region					
Program determination	39	4.47 .37	3.16 .79	9.88	.00
Program strategy	39	4.57 .31	3.63 .55	10.11	.00
Program implementation	39	4.63 .34	3.84 .49	7.86	.00
Education	39	4.42 .41	3.63 .61	7.56	.00
Special programs for female farmers	39	4.36 .49	2.55 .70	13.12	.00
Special programs for rural youth	38	4.28 .72	2.69 1.24	7.22	.00
Evaluation	39	4.43 .47	3.29 .71	9.66	.00
Professional development	37	4.40 .50	3.22 .81	7.90	.00
Composite	39	4.44 .35	3.26 .46	13.26	.00
Far-Western Development Region					
Program determination	31	4.51 .39	3.54 .77	7.47	.00
Program strategy	31	4.62 .26	3.89 .63	6.61	.00

Table 27. Continued

Role	Number of cases	Importance Mean S.D.	Performance Mean S.D.	t-value	t-prob.
Program implementation	31	4.60 .33	3.87 .62	7.37	.00
Education	31	4.49 .42	3.82 .55	5.78	.00
Special programs for female farmers	31	4.38 .43	3.03 .85	8.35	.00
Special programs for rural youth	30	4.46 .51	3.27 1.03	5.76	.00
Evaluation	31	4.43 .42	3.60 .66	6.79	.00
Professional development	30	4.51 .42	3.62 .64	6.14	.00
Composite	31	4.50 .33	3.59 .57	8.01	.00

Tasks were ranked for importance and performance by their respective means; wide discrepancies were observed between the rankings for importance and for performance.

Significant differences were observed in the perceptions of JTAs, ADOs, and the administrators and also in the perceptions of JTAs and ADOs in the two geographic regions for the importance of JTAs' roles and performance of those roles. Significant differences were also observed between the importance of JTAs' roles and the performance of those roles as perceived by each group of extension personnel. The next chapter will be devoted to discussing the findings presented in this chapter.

CHAPTER V. DISCUSSION OF FINDINGS

This chapter will be devoted to discussing the findings described in Chapter IV. The discussion will be centered around (1) Demographic Characteristics of JTAs, (2) Perceived Importance and Performance of Tasks, (3) Comparison of Perceptions of Extension Personnel for Importance and Performance of Roles, (4) Comparison between Importance and Performance of Roles, (5) Qualitative Responses, and (6) Summary.

Demographic Characteristics of JTAs

As might be expected, most of the JTAs were young; 93.1% of them reported their age as 35 years or below. Their average age was found to be lower than that of their supervisors.

None of the JTAs that participated in this study were female, although the need for female JTAs to work with female farmers has always been emphasized. Female farmers make a major contribution to Nepalese agriculture, and their needs should be addressed. Because male JTAs have not been as effective (Sharma, 1984; Shrestha et al., 1984) at reaching and addressing the needs of women, female JTAs need to be trained and employed. However, the enrollment of female trainees at the JTAs' training centers seems too low to meet the current demand for qualified female JTAs. Female students are encouraged to enter the JTA training, but they do not seem enthusiastic about becoming JTAs. The main reason for the low interest of female students in becoming JTAs is that after the training they do not want to go to work in the field far away from their

homes. It becomes even more difficult for them to stay in the field and hold the job after marriage.

Until enough female students are available for JTA training, more female high school graduates could be directly employed for extension work. High school graduates, traditionally, have not proven to be competent extension workers, but if high school graduates are to be employed as JTAs for some time, priority should be given to the employment of female graduates.

Although high school graduates have not proven to be competent extension workers, more than 50% of the JTAs that participated in the study reported having only a high school education. Because of a lack of trained JTAs, high school graduates (with major in agriculture) were employed for extension work. Today there seems to be a large number of JTAs in the field who have only a high school education. Since there are not enough better trained JTAs to replace these high school graduates, regular inservice training needs to be instituted to make them competent extension workers.

A few years ago, the JTA training curriculum was revised to ensure a steady supply of trained, qualified JTAs. In addition to revising the curriculum, physical facilities were improved, and the student enrollment increased. The quality of the new JTA training program and its ability to produce more JTAs to meet the demand has yet to be assessed. But at this point it can be said that the new training program has not been able to remove the regional imbalance in training and employing JTAs. The

regional imbalance of training seems to continue due to the fact that both JTA training centers are located in one developmental region.

Both of the JTA training centers are located in the Western Development Region, making it more convenient for students of this region, and less convenient for students of other developmental regions. Findings of this study revealed that the largest number of JTAs came from this region followed by students from the conveniently located Central Development Region and the Eastern Development Region. Very few JTAs reported their home in the Mid-Western Development Region or the Far-Western Development Region.

Regional imbalance in training may contribute to imbalance in the distribution of JTAs in the developmental regions. The results of the study revealed that JTAs. were more likely to be employed in their own developmental region. When the enrollment for JTA training concentrates only in one or two developmental regions, these regions may experience an oversupply of JTAs whereas others may experience shortage, thus creating an imbalance in regional distribution of JTAs.

The Mid-Western and Far-Western Development regions commonly experience the greatest shortage of trained JTAs. Very few trained JTAs reported their home in these two regions. Most of those who had JTA jobs and reported their home in these two regions had completed only a high school education.

Data were also analyzed to find out how JTAs were distributed in the mountain and Terai regions according to the developmental regions of their origin. The largest number of JTAs in the mountain region were found

coming from the Western Development Region and in the Terai region from the Central Development Region. Again, the source of the majority of JTAs in the Western Development Region for the mountain region and in the Central Development Region for the Terai region could be attributed to the location of the JTAs' training centers.

The findings about the origin of JTAs and the greater likelihood of their employment in their region of origin indicate a regional imbalance of distribution. If balanced distribution of trained, qualified JTAs across the developmental regions is to be achieved, a training center should be established in each region. This may not be feasible for some time due to economic constraints. But at least one training center should be established between the Mid-Western and Far-Western Development regions to train JTAs from and for these two developmental regions. Additionally, until training centers are established for each region, a balanced recruitment system for JTA training should be worked out.

Data indicated that there were fewer senior JTAs (those with long tenure) in the Far-Western Development Region than in any other developmental region. Data also revealed that senior JTAs were more likely to obtain employment in the Terai than in the mountain region. The reasons are apparent. The Far-Western Development Region is less developed than any other developmental region, and above all, farthest from the central administration, the Department of Agriculture. In addition, fewer JTAs were trained from this region. Similarly, in comparison to the mountain region, the Terai region offers better physical facilities in terms of transportation, communication, health, etc. The

Terai, which has the Training and Visit System of extension, also gives better incentives to JTAs than does the mountain region, which has the conventional system. Therefore, senior JTAs might be getting preferences to work in the more developed eastern regions and in the Terai.

A large majority of JTAs were young, but about 65% of the JTAs surveyed had been on the job for 6 to 15 years, and many will stay in the job until their retirement. In Nepal, to quit a job out of job dissatisfaction is rare because of the lack of other job opportunities.

As discussed earlier, JTAs are likely to be employed in the developmental region of their origin. The impact of employing JTAs in their region of origin, especially close to their homes, needs to be determined. The impact may be both positive and negative. Being close to home may give them job satisfaction, which in turn, may motivate them to work harder. On the other hand, being close to home, JTAs might often neglect their field duties and go home, in most cases without the knowledge of their supervisors.

Perceived Importance and Performance of Tasks

A discrepancy between the importance of tasks and their performance as perceived by extension personnel was observed. Almost all the tasks had high means for importance and low standard deviations. In contrast to the high importance means, the performance means of the tasks were very low. Higher standard deviations of the performance means also indicated a wide range of ratings by the extension personnel.

The tasks in each role were then ranked according to their importance and performance means. Interestingly, a great deal of discrepancy between the two types of ranking was observed. In each role, the tasks that were first, second, third, or fourth in their importance were not the first, second, third, or fourth in their performance. Conversely, the first, second, third, or fourth highest performed tasks were not the same as first, second, third, or fourth important tasks in that sequence. Some highly ranked tasks for their performance were low ranked for their importance, or some highly ranked tasks for their importance were low ranked for their performance. Several factors may have attributed to such a discrepancy; lack of priority and a clear, specific job description for JTAs are two possibilities.

The high perception means and low standard deviations for the importance of tasks by extension personnel indicate that all tasks should be included in the job description of JTAs. However, this should be done with some caution. Although the tasks were perceived important to highly important for the job of JTAs, given the present working conditions, the capacities of JTAs and the needs of clientele, tasks should be prioritized. The priority might differ from time to time, from region to region, and of course, from one system to another system of extension. However, for any situation the top five to ten tasks with highest means in each role should be the priority in the job description of JTAs. In descending order of importance for each role, they are listed as follows:

Program determination: (1) Determine extension program needs, (2) develop a calendar of operation, (3) establish program priorities, (4)

prepare an annual plan of work, and (5) involve community agencies in planning.

Program strategy: (1) Develop working relationships with farmers, (2) prepare Village Panchayat profile, (3) report activities and progress periodically to supervisors, (4) provide technical information to farmers upon their request, (5) consult with ADO/SMS on program direction, (6) secure sound research information from experiment stations and other sources, (7) develop working relationships with community agencies, (8) use research and technical literature in extension activities, (9) use principles of motivation in extension work, and (10) use farmers' interest in developing extension programs.

Program implementation: (1) Select progressive farmers to conduct trials and demonstrations, (2) promote programs to increase production in such major crop as rice, maize, and wheat, (3) accomplish overall goals set by ADOs, (4) encourage farmers to develop new programs such as nurseries and seed production, (5) identify need for such farm inputs as vegetable seeds, fruit seedlings, farm tools, chickens, ducklings, and fishlings and supply them at cost, (6) plan and conduct trainings for farmers, (7) promote new crops such as ginger, cardamoms, coffee, and silkworms where climatic conditions are favorable, (8) supervise and guide agricultural assistants where applicable, (9) organize crop competition, and (10) help farmers' problem solving skill.

Education: (1) Conduct demonstrations, (2) conduct group discussions with farmers, (3) organize field days and exhibitions, (4) make farm visits to advise farmers, (5) hold regularly scheduled subject matter

meeting with farmers, (6) organize farmers' tours and field trips, (7) listen to radio agricultural program, (8) use several teaching methods in conducting extension program, (9) prepare appropriate teaching materials for extension work, and (10) use posters, wall charts for mass communication.

Special programs for female farmers: (1) Encourage and involve female farmers in such activities as farmers' meetings, trainings, and field trips, (2) provide agricultural and home economic information to female farmers, (3) establish program priorities geared to the needs of female farmers, (4) encourage and involve young women in rural youth programs, and (5) recognize needs of female farmers.

Special programs for rural youth: (1) Develop a 4-H annual plan of work, (2) involve 4-H members in agricultural related projects, (3) provide officer training for 4-H members, (4) organize 4-H clubs and encourage youth activities, and (5) recruit and train volunteers.

Evaluation: (1) Apply research findings when making recommendation, (2) evaluate the crop due to drought, flooding, disease and insect infestation, and other natural calamities, (3) evaluate the crop production situation, (4) assess farmers' problems and needs, (5) keep up-to-date with research findings, (6) evaluate the performance of AAs where applicable, (7) evaluate progress and development of 4-H members, (8) evaluate the impact on farmers due to change in farm production, market price, and farming techniques, (9) evaluate the results of extension events or activities, and (10) evaluate the effectiveness of extension programs.

Professional development: (1) Attend meetings regularly at ADO office, (2) maintain professional competency through inservice, (3) participate in professional activities, (4) maintain a professional philosophy, (5) develop a plan for professional development.

Comparison of Perceptions of Extension Personnel for Importance and Performance of Roles

The hierarchical groups

Significant differences were found in the perceptions of JTAs, ADOs, and administrators for both the importance and performance of roles.

Significant differences were observed in the perceptions of JTAs, ADOs, and the administrators for the importance of five of the eight roles and the composite. In most of the cases, differences were between the perceptions of JTAs and ADOs; the JTAs perceived the importance of roles at a higher level than did the ADOs. However, significant differences were not observed either between the perceptions of JTAs and the administrators or between the perceptions of ADOs and the administrators. Although significant differences were observed in the perceptions of some hierarchical groups and the hypothesis was rejected, the three groups of extension personnel perceived the importance of all eight roles of JTAs at a high level.

JTAs perceived the performance of their roles at the highest level among the three groups, and the administrators perceived the performance at the lowest level. Altogether, differences existed in the perceptions for the performance of six of the eight roles and the composite. This

finding is in line with the finding of Bernardin and Abbott (1985) and Thornton (1980), who reported discrepancy between the ratings of supervisors and self-ratings by subordinates.

Interestingly, the perceptions of the three hierarchical groups did not differ for the performance of "special programs for female farmers" and "special programs for rural youth" roles. JTAs rated the level of performance of these two roles at par with their supervisors and the administrators. JTAs rated their performance of all the roles at a high level except these two, which indicates these two important roles of JTAs were performed the least.

The geographic groups

Extension personnel,. especially JTAs and ADOs, work in two distinct geographical regions: the mountains in the northern part of the country and the Terai in the southern part. These two geographic regions differ sharply from each other not only in geoecology and socioeconomic conditions of people, but also in the extension delivery system. In most of the mountain region, the conventional system of extension is used, whereas in the Terai region, the Training and Visit system of extension is practiced. The hypothesis was put forward to see if significant differences existed in the perceptions of groups of ADOs and JTAs working in these two regions for the importance and performance of roles. The results revealed that the perceptions of ADOs and JTAs differed significantly. Significant differences were observed in the perceptions for the importance of four of the eight roles and the composite.

Significant differences were also observed in the perceptions for the performance of six of the eight roles and the composite. In most of the cases, the perceptions of ADOs in the mountain region differed from the perceptions of JTAs both in the mountain and the Terai regions. The ADOs perceived both the importance and performance of roles at a lower level than did JTAs. Significant differences were not observed between the perceptions of either JTAs or ADOs in the two geographic regions for both the importance and performance of roles. Therefore, the significant differences between the perceptions of ADOs in the mountain and the perceptions of JTAs both in the mountain and the Terai regions could be attributed more to the supervisors and subordinates factor (Bernardin and Abbott, 1985; Thornton, 1980) than to geoecological, socioeconomic, and systems of extension factors.

The developmental regional groups

As with the north and the south, there is variation from the eastern to the western parts of the country. The geoecology, farming systems, and socioeconomic conditions of people distinctively vary from the east to the west. Compared to the east, the west is less developed. However, no significant difference was observed in the perceptions of ADOs in the five developmental regions that run from the east to the west for both the importance and performance of roles.

No significant differences were also observed in the perceptions of JTAs in the five developmental regions for the importance of roles

indicating that all eight roles are equally important across the five developmental regions.

The perceptions of five groups of JTAs, however, differed significantly for the performance of roles. In most of the cases, perceptions of JTAs in the Central Development Region differed significantly with the perceptions of JTAs in the Far-Western Development Region. Surprisingly, the JTAs in the Far-Western Development Region perceived the performance at a higher level than the JTAs in the Central Development Region, for which no plausible explanation can be offered.

Comparison between Importance and Performance of Roles

Hypotheses were tested to see if significant differences existed between importance and performance of roles as perceived by various groups of extension personnel. Extension personnel were grouped using three criteria: (1) hierarchical level, (2) geographic regions, and (3) developmental regions. The hierarchical level had three groups, the geographic regions had four groups, and the developmental regions had five groups of each JTAs and ADOs. The results of comparison revealed a highly significant difference between the importance of JTAs' roles and performance of those roles as perceived by each group of extension personnel.

Administrators and the groups of ADOs were not the only ones who perceived the importance and performance of each role significantly different. Groups of JTAs in various geographic and developmental regions who perform the roles at the field level also perceived the importance and

the performance of each role significantly different. Like the administrators and the groups of ADOs, the different groups of JTAs rated the performance at a significantly lower level than they did for the importance. JTAs perceived that the roles were important to very important to be carried out, but were discontent on the level of performance.

Such a discrepancy in ratings of importance and performance of roles by JTAs was not expected. Although such a great discrepancy was not expected, rating the importance at a high level and the performance at a low level by the JTAs should not be taken as a surprise. High performance does not only depend on the efforts of JTAs. Besides the efforts of JTAs, other factors may influence the performance. Availability of support services, number of clients served, motivation to work, the capacities and innovativeness of the clientele, and the capacities of JTAs themselves--all influence the performance. Therefore, JTAs would not have hesitated to rate the performance at a significantly lower level than the importance of roles.

Qualitative Responses

Extension personnel were asked to write suggestions so that roles of JTAs could be made more specific and consequently, they could become more effective as agricultural extension workers. Most of the extension personnel, especially the JTAs, made important comments. Although some of the comments are not directly related to the role specification, they

could be useful in improving the overall performance of JTAs. The comments of extension personnel are summarized below.

1. Inservice training: Twenty-one extension personnel felt the need for capacity building of JTAs through regular inservice training. The high school graduates who were employed as JTAs especially needed the inservice training to be technically competent. The need for inservice training was suggested especially when new programs in extension are introduced. Besides training for technical competency, some even suggested inservice training for management skills. Others pointed out the need of a longer duration of orientation training.

2. Supply of inputs: According to 25 JTAs, they were not able to perform their roles effectively because farm inputs such as fertilizers, insecticides, and fungicides were not available on time. One JTA wrote, "Farmers would not listen to him if his recommendations related to the use of some kind of inputs." Ten ADOs also suggested a need for the timely supply of farm inputs. Seven JTAs suggested for more cooperation among the Agricultural Development Bank (ADB), the Agricultural Input Corporation (AIC), and the District Agriculture Development Office for an effective extension service. Cooperation among the agencies, they remarked, would ensure the timely supply of inputs and loans to farmers. Fifteen JTAs suggested that the agricultural loan should be given to farmers on the recommendations of JTAs.

3. Performance evaluations: Thirty-five extension personnel, mostly JTAs, complained about the lack of an appropriate performance evaluation

system. Some of the concerns of JTAs on the performance evaluations in their own words are listed below:

- JTAs work in remote, difficult areas, but do not receive any supervision, nor is our work ever evaluated.
- A system of recognition should be strictly followed to motivate JTAs.
- The work of JTAs should even be evaluated by farmers.
- Supervisors should make routine visits to JTAs.
- There is no system of rewarding those who do good work. It seems that such a system would probably not be implemented.

ADOs and the administrators also expressed the need of an appropriate evaluation system.

4. Physical facilities: Twenty-seven JTAs mentioned that housing, office, and transportation facilities should be provided for them. As each JTA covers from two to three Panchayats with about 2500 farm families on average, they need some means of transportation. One JTA even wrote that it takes him more than 24 hours to travel from one part of his area to another part. Some JTAs believed that they still could cover large areas or serve a large number of clients without transportation if they set a fixed time and place to meet the clients instead of making individual home visits. Providing transportation to JTAs may not be possible by the Department of Agriculture. However, JTAs will serve the clients effectively without transportation by reducing the size of areas, as

suggested by twenty other JTAs. This will require training a larger number of JTAs.

5. Equipment and teaching materials: Fifteen JTAs demanded a supply of brochures, posters, and other printed materials on improved farming practices. Some of them wrote in their comments that each of them be given a transistor radio to listen to radio agricultural programs. Still others suggested that the agricultural service centers need to make availability of equipment such as soil testing kits and sprayers.

6. Involvement in program planning: JTAs believed that they should be actively involved in annual and long-range program planning. One JTA commented that "while making annual plans for programs and setting goals, JTAs who work in the field should be consulted." Some JTAs suggested that program planning should be based on the availability of local resources.

7. Opportunity for higher education: Thirty-five JTAs wrote that they be given opportunities for higher education.

8. Miscellaneous comments: Extension personnel, mostly JTAs, made some additional comments concerning various issues of JTAs' role performance. These comments are listed below:

- Supervisors should make sure that JTAs do not come under undesired influence of political leaders.
- Local political leaders and other influentials exploit JTAs. As the politicians or influentials try to take maximum advantage of JTAs, they do not have much time left to work with other clients who may need their help more.
- JTAs should involve women in extension activities.

- Ward Pancha should be informed of the time and place of JTAs' routine visit in the Ward.
- Each JTA should be given a small piece of land where they could demonstrate some practices.
- Wives of JTAs should be given some training in home economics, and they should be employed as para-professionals to work with rural women.
- JTAs need motivation to stay in their assigned locations.
- JTAs should be knowledgeable of their locality; they should be familiar with geoclimatic condition, culture, and tradition of the assigned locality.
- JTAs lack loyalty toward their profession and organization.
- JTAs need sincerity and increased devotion to work.
- There should be distinction between JTs and JTAs in their work.
- Employing JTAs near their home has encouraged them to escape from the field.
- A JTA should be employed for one Panchayat only.
- Individual responsibilities need to be specified.

Extension personnel provided valuable suggestions, which the researcher highly recommends for consideration by the Department of Agriculture.

In the next and final chapter, besides presenting a summary of the research and conclusions of the study, specific recommendations pertaining to the JTAs' role specification and role performance will be made for consideration by the Department of Agriculture.

Summary

A majority of JTAs were young, but they had been in their position for a long time. Many JTAs will probably continue with the extension service until their retirement due to lack of other job opportunities.

Despite the emphasis on female JTAs to work with female farmers, it was rather upsetting to find out that female JTAs were virtually nonexistent.

A regional imbalance of JTA training was observed due to the location of JTA training centers in only one developmental region.

In contrary to the high importance given to the tasks, they were performed at a low level. Inadequate supervision and support services, lack of performance evaluation or lack of reward and punishment system, low capacity of JTAs, low motivation to work, and poor capacity of the clientele to absorb the new technology all may have contributed to the perceived low performance level of tasks. The study also found that the most important tasks were not the best performed tasks and that the best performed tasks were not the most important tasks of JTAs. Possibly, this could be the result of lack of clear and specific roles of JTAs and lack of priorities.

The top five to ten tasks in each role as perceived important by extension personnel should be the priority tasks of JTAs in any given situation. Suggestions provided by the extension personnel, particularly JTAs, could be useful for making the roles of JTAs effective.

CHAPTER VI.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains a summary of the study, conclusions, and recommendations based on the study's findings.

Summary of the Study

Junior Technical Assistants (JTAs), the field level agricultural extension workers in Nepal, hold an important position in the agricultural technology transfer process. As field level agricultural extension workers, they have various roles to perform as follows: (1) program determination, (2) program strategy, (3) program implementation, (4) education, (5) special programs for female farmers, (6) special programs for rural youth, (7) evaluation, and (8) professional development.

Field level agricultural extension workers were first employed in Nepal in 1952 when the Tribhuvan Village Development Program was initiated. These extension workers were then called Village Level Workers (VLWs). In 1959, agricultural extension was restructured and a separate section of extension was established under the Department of Agriculture to revitalize the extension programs in the country. The VLWs were then redesignated as Junior Technical Assistants (JTAs).

JTAs are at the bottom of a complex extension organization that has grown over the years. Currently, there are six systems of extension in practice in the country, and JTAs work as field level extension workers in all the systems. These systems of extension are: (1) Conventional system, (2) Training and Visit system, (3) Tuki system, (4) Farming System

Research and Extension system, (5) Integrated Rural Development Project system, and (6) Block Production system.

After graduating from high school, JTAs are given one year of preservice education. The curriculum of preservice education consists of courses in (1) agronomy, (2) horticulture, (3) soil science, (4) plant protection, (5) animal science, (6) farm management, and (7) agricultural extension.

High school graduates with agricultural majors have also been employed as JTAs due to lack of trained JTAs.

The work environment of JTAs is complex with extreme geoecological conditions, large numbers of clientele with diverse socioeconomic backgrounds, and inadequate support services. In addition, many JTAs exhibit low capacity as extension workers and low motivation to work in the field.

Because the economy of Nepal depends largely on the agricultural sector, efforts are being made to modernize agriculture. JTAs, as agents of change, have important roles in this effort, but the roles expected of them are not clear and specific.

The purpose of this study was to investigate the importance of JTAs' roles and the performance of those roles as perceived by different groups of extension personnel in order to develop a job description for JTAs. The study sought to establish demographic characteristics of extension personnel including JTAs, determine perceived importance and performance of tasks in each role category, and determine if significant differences existed in the perceptions of different groups of extension personnel for

the importance and performance of JTAs' roles. The study also sought to determine if a significant difference existed between importance and performance of JTAs' roles as perceived by different groups of extension personnel.

A survey instrument was specifically developed for this study. The instrument was divided into two parts. The first part consisted of 91 task items grouped under eight roles. The second parts, which consisted of eight questions, sought information on demographic characteristics of the respondents. A jury of experts reviewed the task items on the instrument for content and face validity. The instrument was first developed in English, then the final instrument was prepared and administered in Nepali.

The respondents of the study consisted of three hierarchical levels of extension personnel--the JTAs at the field level, the ADOs at the supervisory level, and the administrators at the top policy making level. All of the 75 ADOs and 18 administrators were included in the study, whereas 215 permanent JTAs were randomly selected as a sample.

Data were collected during the fall of 1988. Instruments were hand carried to all the respondents during the annual regional and monthly district meetings. Out of 308 extension personnel included in the study, 279 responded. Out of those 279, 269 instruments were usable--182 from JTAs, 70 from ADOs, and 17 from administrators--resulting in an 87.34% response rate. Only four of the participants were women.

The data were coded and analyzed using the Statistical Package Program for the Social Sciences (SPSSx). The Cronbach's alpha procedure was used

to examine the level of internal consistency and stability of the task items in the instruments. Frequencies and percentages were computed for the demographic characteristics information of the respondents. Means and standard deviations were computed for all the task items.

Analysis of variance and t-test procedures were performed to test the hypotheses. The Scheffé test was used to locate the source of differences when significant differences were observed in the analysis of variance at the .05 alpha level that was established a priori.

Results of the study showed that over two-thirds of the JTAs (76.1%) were between the ages of 26 to 36 years. A large majority of the ADOs (57.1%) and the administrators (58.8%) were between the ages of 36 to 45 years.

More than half of the JTAs (53.3%) had been with extension between 6 to 10 years. The tenure of ADOs was widely and evenly distributed across various age categories. Over two-thirds of the administrators (68.8%) reported tenure of 21 years or more. The largest percentage of JTAs (40.9%) and ADOs (35.8%) had been in their current position for 5 to 6 years and 1 to 2 years, respectively. Over three-fourths of the administrators (76.5%) reported experience in their current position as 4 years or less.

In the Far-Western Development Region, the highest percentage of JTAs (58%) had 1 to 5 years of job tenure. In the rest of the developmental regions, the majority of JTAs had 6 to 10 years of job tenure.

A high percentage of JTAs (54.5%) held only a high school education. Most of the ADOs had either a BS degree (29%) or MS degree (42%) in

agriculture. Almost all the administrators (94%) reported having an MS or higher level of education.

Out of the five developmental regions, the Western Development Region had employed the highest percentage of JTAs (90%) with homes in the same region. The lowest percentage of JTAs (56.4%) employed from the same region was in the Mid-Western Development Region.

Out of 108 JTAs working in that region, the highest percentage (60%) had their home in the same geographic region. Of those JTAs working in the mountain region, the highest percentage (37%) had homes in the Western Development Region. In the case of the Terai, out of 71 JTAs employed, the highest percentage (88.7%) had their home in the same geographic region. Out of the total JTAs working in the Terai, the highest percentage (34.4%) came from the Central Development Region.

Altogether, the highest percentage of JTAs (33.5%) had their home in the Western Development Region and the lowest percentage of JTAs (10.1%) had their home in the Far-Western Development Region.

When extension personnel were asked to rate the importance of tasks and performance of those tasks by JTAs, they rated the tasks in all the roles as important to very important. However, they rated the performance of tasks at a lower level. The perception means of tasks ranged on a scale of 1 to 5 from 3.94 to 4.83 for importance, compared to 2.08 to 4.50 for performance. Thus, the tasks within each role had less variability for importance than for performance. Most of the tasks had less than .70 standard deviation for importance compared to over 1.0 standard deviation for performance.

When the researcher ranked the tasks by their means, a great deal of discrepancies were observed between the perceived importance and the perceived performance. The ranking of tasks for importance were not in the same order as the ranking of tasks for performance. In other words, tasks which were first, second, third, and so forth for importance were not first, second, third, and so forth in order for performance, meaning the most important tasks were not the best performed tasks, or the best performed tasks were not the most important tasks of JTAs.

Extension personnel were grouped by their hierarchical levels, geographic regions, and developmental regions; and hypotheses were tested to determine if significant differences existed in the perceptions of the various groups of extension personnel for the importance and performance of roles. Hypotheses were also tested to determine if significant differences existed between importance and performance of roles as perceived by each group of extension personnel.

When extension personnel were asked to write suggestions for the role specifications of JTAs, most of them wrote some comments. The main points of their comments were as follows: (1) inservice training be instituted for JTAs, (2) inputs be made available to farmers on time, (3) performance of JTAs be evaluated, (4) physical facilities--transportation, housing, and office--be provided to JTAs, (5) teaching materials be given, (6) opportunities be given to JTAs for pursuing higher education, and (7) JTAs be actively involved in annual and long-range program planning.

Conclusions of the Study

1. Although their experience in extension work was long, a large majority of JTAs were young in age and younger than their supervisors.

2. In spite of emphasis on employing female JTAs, the study did not indicate any progress in this effort. According to the results of the study, it appeared that the female extension personnel were virtually nonexistent.

3. High school graduates with an agricultural major were not prepared for the JTA position. Due to lack of trained JTAs, they were employed to meet the demand temporarily. Surprisingly, they comprised a majority of the field level agricultural extension workers.

4. JTAs were more likely to be posted in their own developmental and geographic region.

5. A regional imbalance in JTA training existed. Because the only two JTA training centers are located in the Western Development Region, the largest number of JTAs were from this region. The least number of JTAs had their home in the Far-Western Development Region followed by the Mid-Western Development Region. The JTA training centers being far from these two western regions, those JTAs who reported their home in these regions could be mostly high school graduates.

6. Relatively junior JTAs were found working in the Mid-Western Development Region and the Far-Western Development Region and the mountain region compared to other developmental regions and the Terai region.

7. Almost all the tasks in the eight roles studied were perceived to be important to very important by extension personnel. However, the

respondents, including the JTAs who perform the tasks, perceived that the tasks were not performed well.

8. A great deal of discrepancy existed between the perceived importance of tasks in each role and the perceived performance of those tasks. In most cases, the most important tasks were not the best performed tasks, or the best performed tasks were not the most important tasks of JTAs.

9. Statistically significant differences were observed in the perceptions of JTAs, ADOs, and administrators for the importance of five of the eight roles and the composite. Significant differences were also observed in the perceptions of these three hierarchical groups of extension personnel for the performance of six of the eight roles and the composite. Therefore, the hypothesis that there is no significant difference in the perceptions of JTAs, ADOs, and administrators for the importance and performance of JTAs' roles was rejected.

10. Statistically significant differences were observed in the perceptions of JTAs and ADOs in the two geographic regions, the mountain and the Terai, for the importance of four of the eight roles and the composite. Statistically significant differences were also observed in the perceptions of the four groups of extension personnel for the performance of six of the eight roles and the composite. Therefore, the hypothesis that there is no significant difference in the perceptions of JTAs and ADOs in the two geographic regions for the importance and performance of JTAs' roles was rejected.

11. The data failed to reject the hypothesis that there is no significant difference in the perceptions of ADOs in the five developmental regions for the importance and performance of JTAs' roles.

12. Statistically significant difference was not found in the perceptions of JTAs in the five developmental regions for the importance of roles. But statistically significant differences were found in the perceptions for six of the eight roles and the composite. Therefore, the hypothesis that there is no significant difference in the perceptions of JTAs in the five developmental regions for the importance and performance of JTAs' roles was partially rejected.

13. A highly statistically significant difference was observed between the importance of roles and performance of those roles as perceived by each group of extension personnel. Therefore, the hypotheses that (1) there is no significant difference between importance and performance of JTAs' roles as perceived by JTAs, ADOs, and the administrators, (2) there is no significant difference between importance and performance of JTAs' roles as perceived by JTAs and ADOs in the two geographic regions, and (3) there is no significant difference between importance and performance of JTAs' roles as perceived by JTAs and ADOs in the five developmental regions, were rejected.

14. The most poorly performed roles were "special programs for female farmers" and "special programs for rural youth."

Recommendations

1. All the tasks in this study were perceived important by all three levels of extension personnel and therefore should be included in a JTA job description. The five to ten tasks with the highest importance ratings in each role should have high priority.

2. Each JTA should be given a copy of a job description which should list the priority tasks.

3. The job description for JTAs should be used to guide the curriculum for both preservice and inservice education of JTAs. Job descriptions should also be followed in providing orientation training.

4. The job description for JTAs should serve as a criteria for performance evaluation.

5. Job description should change as technology and conditions change; therefore, the job descriptions of JTAs should be evaluated and revised as needed.

6. JTAs should set some portion of their time to work with female farmers and the rural youth. These two groups are important constituents of JTAs' clientele and, therefore, their needs must be addressed.

7. JTAs should make maximum use of local means of communication, such as opinion leaders, village singers, and simple bulletin boards.

8. JTAs should seek professional development. The ADOs and administrators should encourage and provide opportunities for the professional advancement of JTAs. JTAs should be included and actively involved in the annual meetings in the regional headquarters.

Some other recommendations to improve the performance of JTAs are as follows.

1. A JTA training center should be established in each developmental region to train JTAs and correct the regional imbalance of the supply of JTAs. If establishing a JTA training center in each development region is not feasible due to economic constraints, at least one training center should be established between the Mid-Western and Far-Western Development regions.

2. When high school graduates are hired for the position of JTA, they should be given adequate orientation training and regular inservice training on different subject matter of agriculture and extension methods. Inservice training should be instituted for all the JTAs. Among the high school graduates, more females should be encouraged to be field level extension workers.

3. Recruiting JTAs in their own regions or districts might contribute to more job satisfaction and, in turn, might lead to better performance. On the other hand, employment in their own regions or districts may encourage JTAs to frequently return to their homes without the permission and knowledge of their supervisors, and remain absent from the field. Regular and random visits to the field by supervisors will not only discourage such practices, but also encourage and motivate JTAs to stay in the field and work sincerely.

4. Performance could be improved by strictly following a system of recognition. ADOs should evaluate the performance of JTAs, at least once a year, and reward those JTAs who are sincere in their works.

5. Since JTAs are expected to serve a large area and a large number of clients, door-to-door visits to farmers are virtually impossible. Therefore, specific places and times should be designated in their areas to meet with groups of farmers. This will also help supervisors monitor the activities of JTAs.

6. JTAs cannot perform their roles effectively if agricultural inputs and loans are not available to farmers when needed. The ministry of agriculture, therefore, should develop an effective system of interagency coordination for a timely supply of inputs.

7. Besides visits by supervisors or monthly meetings at the district agricultural office, JTAs need to be kept up-to-date through regular newsletters.

The following recommendations are made for additional research:

1. JTAs need technical competencies to perform their tasks well. A study should be conducted to determine technical agricultural competencies possessed and needed by JTAs.

2. A study should be conducted to investigate the present level of job satisfaction of JTAs. Factors that motivate them to work need to be determined and enacted accordingly.

3. A study should be conducted to determine how the clientele, including female farmers and rural youth, perceive the importance and performance of JTAs' roles.

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APPENDIX

दिनाङ्क: __ ___ ___

श्री कृषि विकास अधिकृतज्यू,
कृषि विकास शाखा

महाशय,

मैले जे. टि. ।जे. टि. ए. हरुको भूमिका (काम कर्तव्य) र जिम्मेवारी प्रति कृषि प्रसार सेवामा कार्यरत विभिन्न तहका व्यक्तिहरुको के कस्तो विचार छ बुझ्न एउटा अनुसन्धान अध्ययन गर्न लागेको व्यहोरा यहाँलाई यो मन्चा पहिला पनि अवगत गराएको हुं । जे. टि. ।जे. टि. ए. हरुको भूमिका र जिम्मेवारी प्रति विचार जनाउन कृषि विकास अधिकृतहरु र केही जिल्लाका जे. टि. ए. हरुलाई पनि अनुरोध गर्दछु ।

जे. टि. ।जे. टि. ए. हरुको भूमिका तथा जिम्मेवारी सम्बन्धी प्रश्नावली तपाईको कार्यालयमा अविलम्ब पठाउँदै छु । प्रश्नावलीको जवाफ दिन तपाईलाई र यदि त्यस जिल्लाबाट जे. टि. ।जे. टि. ए. हरु संलग्न गरिएको भए, जे. टि. ।जे. टि. ए. हरुलाई पनि अनुरोध गर्दछु । कार्यालयमा हुने बैठकमा सम्बन्धित जे. टि. ।जे. टि. ए. हरुलाई उक्त प्रश्नावली दिई भर्न लगाउनु हुन अनुरोध गर्दछु ।

प्रश्नावलीको पूरा जवाफ लेख्न र यथाशक्य छिटो फिर्ता पठाउन तपाई र जे. टि. ।जे. टि. ए. हरुको सहयोगको लागि आभार व्यक्त गर्दछु ।

भवदीय,

नारायण कुवँर
उप-प्राध्यापक
कृषि पशु विज्ञान अध्ययन संस्थान
रामपुर ।

श्री ५ को सरकार
कृषि मन्त्रालय
कृषि विभाग
170

फोन नं.:— ४२१३२१
४२१३४३
४२१३४६

(कृपया पत्र व्यवहार गर्दा प्राप्त पत्र संख्या र मिति उल्लेख गर्नु होला।)

हरिहर भवन, ललितपुर, नेपाल।
मिति .....

पत्र संख्या :-
च. नं.:-

... ...
... ...
... ...

विषय :- अनुसन्धान कार्यमा सहयोग गर्ने बारे ।

महाशय,

श्री नारायण गुंवरले "जे. टि. । जे. टि. ए. हरुको पेशागत भूमिका र जिम्मेवारी प्रति सोचाई" भन्ने विषयमा अनुसन्धान अध्ययन गर्न लाग्नु भएको छ । उक्त अनुसन्धान अध्ययनको नतीजाबाट जे. टि. । जे. टि. ए. हरुको पेशागत भूमिका तथा जिम्मेवारीको ठोस परिभाषा तयार गर्न उपयोगी हुनेछ जसबाट कृषि प्रसार कार्यकर्ताको क्षमता उनीहरुको प्रभावकारीता बढ्ने छ ।

अनुसन्धानकर्ता श्री नारायण गुंवर कृषि र पशु विज्ञान अध्ययन संस्थान, रामपुरमा उप-प्राध्यापक हुनुहुन्छ र हाल आयोवा स्टेट युनिभर्सिटि, संयुक्त राज्य अमेरिकामा पिएच. डि. स्तरमा कृषि प्रसार शिक्षा अध्ययन गर्दै हुनुहुन्छ । यस अनुसन्धानको डाटा निजले पिएच. डि. डिजर्टेसन् (थेसिस) तयार गर्ने प्रयोगमा ल्याउनु हुनेछ ।

यस अनुसन्धान अध्ययनमा सहभागी हुन कृषि प्रसार पेशामा रहेका केही व्यक्तिहरुलाई मात्र अनुरोध गरिएको छ । सोही क्रममा तपाईंलाई पनि अनुरोध गरिएको छ ।

अनुसन्धानकर्तालाई अनुसन्धान अध्ययन गर्न सिमित समय प्राप्त हुँदा संलग्न पत्र अनुसार प्रश्नावली पूरा गरेर समयमै फिर्ता गर्नु भई सहयोग गर्नु हुन अनुरोध गर्दछु ।

भवदीय,

माणिक लाल प्रधान
उप-महानिर्देशक
(प्रा. सेवा तथा प्रसार)

श्री ५ को सरकार
कृषि मन्त्रालय
कृषि विभाग

171

फोन नं :— १२२१३३
१२१२४३
१२१८४५

(कृपया पत्र व्यवहार गर्दा प्राप्त पत्र संख्या र मिति उल्लेख गर्नु होला)

हरिहर भवन, ललितपुर, नेपाल

पत्र संख्या :-

च. नं. :-

मिति .....

श्री कृषि विकास अधिकृतज्यू,
कृषि विकास शाखा,

... ...

विषय :- अनुसन्धान कार्यमा सहयोग गर्ने बारे ।

महाशय,

श्री नारायण कुंवरले "जे. टि. । जे. टि. ए. हरुको पेशागत भूमिका र जिम्मेवारी प्रति सोधाई" भन्ने विषयमा अनुसन्धान अध्ययन गर्न लाग्नु भएको छ । उक्त अनुसन्धान अध्ययनको नतीजाबाट जे. टि. । जे. टि. ए. हरुको पेशागत भूमिका तथा जिम्मेवारीको ठोस परिभाषा तयार गर्न उपयोगी हुनेछ जसबाट कृषि प्रसार कार्यकर्ताको रूपमा उनीहरुको प्रभावकारीता बढ्ने छ ।

अनुसन्धानकर्ता श्री नारायण कुंवर कृषि र पशु विज्ञान अध्ययन संस्थान रामपुरमा उप-प्राध्यापक हुनु हुन्छ र हाल आयोवा स्टेट युनिभर्सिटि, संयुक्त राज्य अमेरिकामा पिएच. डि. स्तरमा कृषि प्रसार शिक्षा अध्ययन गर्दै हुनु हुन्छ । यस अनुसन्धानको डाटा निजले पिएच. डि. डिजर्टेसन् (थेसिस) तयार गर्न प्रयोगमा ल्याउनु हुनेछ ।

यस अनुसन्धान अध्ययनमा सहभागी हुन कृषि प्रसार पेशामा रहेका वेही व्यक्तिहरुलाई मात्र अनुरोध गरिएको छ । सोही क्रममा तपाईलाई पनि अनुरोध गरिएको छ ।

अनुसन्धानकर्तालाई अनुसन्धान अध्ययन गर्न सिमित समय प्राप्त हुँदा संलग्न पत्र अनुसार प्रश्नावली पूरा गरेर समयमै फिर्ता गर्नु भई सहयोग गर्नु हुन अनुरोध गर्दछु । यदि त्यस जिल्लाबाट जे. टि. । जे. टि. ए. हरु पनि प्रश्नावलीको जवाफ दिन संलग्न गरिएको भए सम्बन्धित जे. टि. । जे. टि. ए. हरुलाई मर्न लगाई समयमै फिर्ता पठाउने व्यवस्थाको लागि पनि अनुरोध छ ।

भवदीय,

माणिक लाल प्रधान
उप-महानिर्देशक
(प्रा. सेवा तथा प्रसार)

श्री ५ को सरकार
कृषि मन्त्रालय
कृषि विभाग
172

फोन नं.:— ५२१३२३
५२१३२६
५२१३५८

(कृपया पत्र व्यवहार गर्दा प्राप्त पत्र संख्या र मिति उल्लेख गर्नु होला।

हरिहर भवन, ललितपुर, नेपाल।

पत्र संख्या:-

च. नं.:-

मिति .....

श्री क्षेत्रीय निर्देशकज्यू,

... ...

... ...

विषय: अनुसन्धान कार्यमा सहयोग गर्ने बारे।

महाशय,

श्री नारायण कुंवरले "जे.टि.।जे.टि.ए.हरुको पेशागत भूमिका र जिम्मेवारी प्रति सोचाई" भन्ने विषयमा अनुसन्धान अध्ययन गर्न लाग्नु भएको छ । उक्त अनुसन्धान अध्ययनको नतिजाबाट जे.टि.।जे.टि.ए.हरुको पेशागत भूमिका तथा जिम्मेवारीको ठोस परिभाषा तयार गर्न उपयोगी हुनेछ जसबाट कृषि प्रसार कार्यक्रमको रूपमा उनीहरुको प्रभावकारीता बढ्नेछ ।

अनुसन्धानकर्ता श्री नारायण कुवँर कृषि र पशु विज्ञान अध्ययन संस्थान, रामपुरमा उप-प्राध्यापक हुनुहुन्छ र हाल आयोवा स्टेट युनिभर्सिटी, संयुक्त राज्य अमेरिकामा पिएच.डी स्तरमा कृषि प्रसार शिक्षा अध्ययन गर्दै हुनुहुन्छ। यस अनुसन्धानको डाटा निजले पिएच.डि. डिजर्टेसन (थेसिस) तयार गर्न प्रयोगमा ल्याउनु हुनेछ ।

यस अनुसन्धान अध्ययनमा सहभागी हुन कृषि प्रसार पेशामा रहेका केही व्यक्तिहरुलाई मात्र अनुरोध गरिएको छ । सोही क्रममा तपाईलाई पनि अनुरोध गरिएको छ ।

अनुसन्धानकर्ताको संलग्न पत्र अनुसार प्रश्नावली पूरा गरेर फिर्ता गर्नु भई अनुसन्धानकर्तालाई सहयोग गर्नु हुन अनुरोध गर्दछु । त्यस क्षेत्र अन्तर्गतका सबै कृषि विकास अधिकृतहरुलाई र केही जिल्लाहरुका जे.टी.।जे.टि.ए.हरुलाई पनि अनुसन्धान अध्ययनमा संलग्न गरिएको हुनाले क्षेत्रीय मूल्यांकन समीक्षा बैठकमा सम्बन्धित कृषि विकास अधिकृतहरुलाई सहयोगको लागि जानकारी गराई दिनु हुन पनि अनुरोध छ ।

भवदीय,

माणिक लाल प्रधान
उप-महानिर्देशक
(प्रा.सेवा तथा प्रसार)

मिति: २०४५। ।

श्री कृषि विकास अधिकृतज्यू,
कृषि विकास शाखा,
... ...

महाशय,

जे. टि. । जे. टि. ए. हरुले गरिरहेका र गर्न पर्ने काम, कर्तव्य (भूमिका) र वहन गर्न पर्ने जिम्मेवारी-लाई निश्चित गर्नु पर्ने आवश्यकता धेरै अवसरहरुमा व्यक्त गरिरको छ । तर विभिन्न तहमा कार्यरत कृषि प्रसारसंग संलग्न व्यक्तिहरुमा एकमत नत्याइकन जे. टि. । जे. टि. ए. हरुको भूमिका र जिम्मेवारी निश्चित प्रकारको बनाउन नसकिने हुंदा यस बारे सम्बन्धित सबै व्यक्तिहरुको के विचार छ बुझ्न जरुरी देखिन्छ ।

मैले जे. टि. । जे. टि. ए. हरुको भूमिका र जिम्मेवारी प्रति कृषि प्रसारमा कार्यरत विभिन्न तहका व्यक्तिहरुको के कस्तो विचार छ बुझ्न अनुसन्धान अध्ययन गर्न लागेको छु । जे. टि. । जे. टि. ए. हरुको भूमिका र जिम्मेवारी प्रति आफ्नो विचार जनाउन केही व्यक्तिहरु मध्ये मैले तपाईलाई पनि अनुरोध गरेको छु ।

संलग्न गरिएको प्रश्नावली पुरा गर्नु हुन अनुरोध छ । कृपया प्रश्नावली पुरा नगरेसम्म यसमा केही छुटफाट नगर्नु होला । कुनै प्रश्नहरु गाह्रो लागेमा कृपया आफ्नो मत अनुसार सबभन्दा राम्रो विचार व्यक्त गर्नु हुनेछ । टिका टिप्पणी लेख्न चाहनु भएमा प्रश्नावलीको छेउछाउमा लेख्न सकिन्छ ।

तपाईले जनाउनु भएका विचारहरु पूर्णत: गोप्य राखिने छन् । तिनु भएका कुनै पनि जवाफहरु तपाईको नामसंग उल्लेखित गरिने छैन । तपाईले पर्नु भएको प्रश्नावली मनेर छुट्याउन संकेताक्षर लेखिएको छ जो अनुसन्धानकर्तालाई मात्र थाहा हुन्छ । प्रश्नावली फर्के नफर्केको बुझ्न र अनुगमन गर्नको लागि मात्र संकेताक्षरको प्रयोग गरिने छ । मार्च ३० गते भित्र संकेताक्षर हटाइने छ ।

पुरा गर्नु भएको प्रश्नावली नारायण कुंवर माफर्त श्री वि. पि. सिन्हा, प्रमुख, करल सेम ग्रेन प्रोजेक्ट, श्रीमहल, राम बंगला, पुल्चोक, ललितपुरको ठेगानामा यथाशिघ्र पठाइदिनु हुनेछ । जे. टि. । जे. टि. ए. हरुबाट पुरा गरेको प्रश्नावलीहरु फिर्ता पठाउन हुलाक टिकट र ठेगाना सहितको खाम संलग्न गरेको छु। उक्त पुरा भएका प्रश्नावलीहरु यथाशिघ्र हुलाकबाट उमरोक्त ठेगानामा पठाईदिनु हुनेछ, तर २०४५।५।२ भन्दा ढिला नहुनदिन पनि हार्दिक अनुरोध गर्दछु ।

यस अनुसन्धान अध्ययनको नतिजाको संक्षिप्त विवरण चाहनु भएमा प्रश्नावली फिर्ता गरिने खाम को पछाडी आफ्नो नाम र ठेगाना सहित "नतिजाको संक्षिप्त विवरण पठाईदिनु होला" मनेर लेख्नुहोला ।

अनुसन्धान अध्ययनमा सिमित व्यक्तिहरुलाई अनुरोध गरिएको हुनाले तपाईको सहयोग अति नै महत्वपूर्ण छ । अध्ययन सफल पार्न तपाईको सामयिक सहयोगको लागि धन्यवाद छ ।

भवदीय,

नारायण कुंवर
उप-प्राध्यापक
कृषि र पशु विज्ञान अध्ययन संस्थान
रामपुर ।

मिति: २०४५। ।

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... ...

महाशय,

जे.टि.। जे.टि.ए.हरूले गरिरहेका र गर्न पर्ने काम, कर्तव्य (भूमिका) र वहन गर्न पर्ने जिम्मेवारी-लाई निश्चित गर्नु पर्ने आवश्यक्ता धेरै अवसरहरूमा व्यक्त गरिएको छ । तर विभिन्न तहमा कार्यरत कृषि प्रसारसंग संलग्न व्यक्तिहरूमा एकमत नल्याइकन जे.टि.। जे.टि.ए. हरूको भूमिका र जिम्मेवारी निश्चित प्रकारको बनाउन नसकिने हुँदा यस बारे सम्बन्धित सबै व्यक्तिहरूको के विचार छ बुझ्न जरुरी देखिन्छ ।

मैले जे.टि.। जे.टि.ए. हरूको भूमिका र जिम्मेवारी प्रति कृषि प्रसारमा कार्यरत विभिन्न तहका व्यक्तिहरूको के कस्तो विचार छ बुझ्न अनुसन्धान अध्ययन गर्न लागेको छु । जे.टि.। जे.टि.ए. हरूको भूमिका र जिम्मेवारी प्रति आफ्नो विचार जनाउन केही व्यक्तिहरू मध्ये मैले तपाईलाई पनि अनुरोध गरेको छु ।

संलग्न गरिएको प्रश्नावली पुरा गर्नु हुन अनुरोध छ । कृपया प्रश्नावली पुरा नगरेसम्म यसमा केही हेरफेर नगर्नु होला । कुनै प्रश्नहरू गाह्रो लागेमा कृपया आफ्नो मत अनुसार सबभन्दा राम्रो विचार व्यक्त गर्नु हुनेछ । टिका टिप्पणी लेख्न चाहनु भएमा प्रश्नावलीको हेरफेरमा लेख्न सकिन्छ ।

तपाईले जनाउनु भएका विचारहरू पूर्णत: गोप्य राखिने छन् । दिनु भएका कुनै पनि जवाफहरू तपाईको नामसंग उल्लेखित गरिने छैन । तपाईले गर्नु भएको प्रश्नावली मनेर हुट्याउन संकेताक्षर लेखिएको छ जो अनुसन्धानकर्ताहरूलाई मात्र थाहा हुन्छ । प्रश्नावली फर्के नफर्केको बुझ्न र अनुगमन गर्नको लागि मात्र संकेताक्षरको प्रयोग गरिने छ । मार्ग ३० गते भित्र संकेताक्षर हटाइने छ ।

कृपया पुरा गर्नु भएको प्रश्नावली सामवन्दी गरी कृषि विकास अधिकृत मार्फत श्री वि. पि. सिन्हा, प्रमुख, रुरल सैम प्रेन प्रोजेक्ट, श्रीमहल, राम वंगला, पुल्चोक,ललितपुरको ठेगानामा पठाईदिनु हुनेछ, तर २०४५।५।२ भन्दा ढिला नहुनेदिन हार्दिक अनुरोध छ ।

यस अनुसन्धान अध्ययनको नतिजाको संक्षिप्त विवरण चाहनु भएमा प्रश्नावली फिर्ता गरिने साम को पठाउँदा आफ्नो नाम र ठेगाना सहित ' नतिजाको संक्षिप्त विवरण पठाईदिनु होला ' भनेर लेख्नुहोला ।

अनुसन्धान अध्ययनमा सीमित व्यक्तिहरूलाई अनुरोध गरिएको हुनाले तपाईको सहयोग अतिनै महत्वपूर्ण छ । अध्ययन सफल पार्न तपाईको सामयिक सहयोगको लागि धन्यवाद छ ।

भवदीय,

नारायण कुंवर
उप-प्राध्यापक
कृषि र पशु विज्ञान अध्ययन संस्थान
रामपुर ।

मिति:- २०४५।४।११

श्री कृषि विकास अधिकृतज्यू,
कृषि विकास बाखा

महाशय,

एक एप्ता पहिले जे.टी.। जे.टी.ए.हरूको पेशागत भूमिका र जिम्मेवारी प्रति जे.टि.ए.हरू सहित (दैलेख जिल्लाका मात्र) तपाईंको पनि विचार बुझ्न प्रश्नावलीहरू पठाएको थिए । प्रश्नावली भरेर फर्काउन तपाईं तथा सम्बन्धीत जे.टि.ए.हरूको सहयोगको लागि धन्यवाद दिन चाहन्छु । यदि प्रश्नावली भरेर फिर्ता नपठाइएको भए कृपया भरेर फिर्ता पठाउने व्यवस्थाको लागि पुन: अनुरोध छ ।

यस अनुसन्धान अध्ययनमा सीमित तर प्रतिनिधित्व गर्ने व्यक्तिहरूलाई मात्र प्रश्नावली पठाइएको हुनाले अनुसन्धान अध्ययनको सही नतिजाको लागि तपाईं तथा जे.टि.ए.हरूको सहयोग अति नै महत्त्वपूर्ण भएको कुरा जानकारी गराउन चाहन्छु ।

सहयोगको लागि धन्यवाद छ ।

भवदीय,

(नारायण कुवंर)
उप- प्राध्यापक
कृषि र पशु विज्ञान अध्ययन संस्थान
रामपुर

सङ्केत ताङ्केत :

प्रश्नावली भरेको मिति : २०४५। ।

जे.टि.। जे.टि.ए.हरुको पेशागत भूमिका र जिम्मेवारी प्रति सोचाई

जवाफ दिने तरिका :

कृपया निम्न विषयहरु अध्ययन गर्नुभै प्रत्येक विषयमा आफ्नो विचार (सोचाई) दुई पटक जनाउनुहोस् । प्रत्येक विषयमा जे.टि.। जे.टि.ए हरुले खेल्नु पर्ने भूमिकाको महत्व बारे आफ्नो विचार बायाँ पट्टीको कलममा र जे.टि.। जे.टि.ए.हरुबाट ति विषय सम्बन्धी के कस्तो काम भएको छ आफ्नो विचार दायाँ पट्टीको कलममा जनाउनुहोस् । प्रत्येक कलमको लागि मूल्यांकन स्केल तल दिइएको छ । कृपया आफ्नो विचारसंग मिल्ने उपयुक्त मुल्यांकन स्केलको नम्बरमा घेरा लगाउनु होस् ।

तपाईंको विचार अनुसार प्रत्येक विषयमा जे.टि.।जे.टि.ए.हरुको भूमिकाको महत्व जनाउने मूल्यांकन स्केल :

५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केहि भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कतिपनि महत्वपूर्ण छैन

तपाईंको विचार अनुसार प्रत्येक विषयमा जे.टि.। जे.टि.ए हरुबाट के कति काम भएको छ, जनाउने मुल्यांकन स्केल :

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केहि भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कतिपनि राम्रो काम भएको छैन

तपाईंको आफ्नो विचार जनाउन कसरी चिन्हो लगाउने भन्ने उदाहरण :

(५) ४ ३ २ १ राष्ट्रिय कृषी सम्मेलनहरुमा भाग लिने ५ ४ ३ (२) १

भाग : क

कार्यक्रम निर्धारण सम्बन्धी भूमिका र जिम्मेवारीहरु

भूमिकाको महत्व		जे.टि.ए.बाट भएको काम
५ ४ ३ २ १	स्थानीय कृषकहरुको आवश्यकता अनुसार कृषि प्रसार कार्यक्रम निर्धारण गर्ने ।	५ ४ ३ २ १

५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केहि भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कत्तिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केहि भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कत्तिपनि राम्रो काम भएको छैन

भूमिकाको महत्व		जे.टि.। जे.टि.ए. बाट भएको काम
५ ४ ३ २ १	प्राथमिकताको आधारमा कार्यक्रम बनाउने	५ ४ ३ २ १
५ ४ ३ २ १	बजेट तयार गर्न कृषि विकास अधिकृतलाई मद्दत गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	कार्यक्रम संचालनको लागि समय तालिका तयार गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	वार्षिक कार्यक्रम तयार गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	दीर्घकालिन कार्यक्रम तयार गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	स्थानीय संघ संस्थाहरुलाई कार्यक्रम तर्जुमामा संलग्न गराउने	५ ४ ३ २ १
५ ४ ३ २ १	यी बाहेक अन्य विषय भए उल्लेख गर्नुहोस् :	५ ४ ३ २ १
	- - - - - - - - - - - - - - - - -	
	- - - - - - - - - - - - - - - - -	
	कार्यनीति सम्बन्धी भूमिका र जिम्मेवारीहरु	
५ ४ ३ २ १	क्रमबद्ध कार्य तालिकाको उपयोग गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	कृषकहरुको अनुरोधमा उनीहरुलाई प्राविधिक जानकारी दिने	५ ४ ३ २ १
५ ४ ३ २ १	आफैले चासो लिई कृषकहरुलाई प्राविधिक जानकारी दिने	५ ४ ३ २ १
५ ४ ३ २ १	कृषि विकास अधिकृत र विषय विशेषज्ञसँग कार्यक्रम बारे निर्देशनको लागि सरसल्लाह गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	स्थानीय गन्यमान्य व्यक्तिहरुसँग परिचय बढाउने	५ ४ ३ २ १

५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कतिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कतिपनि राम्रो काम भएको छैन

भूमिकाको महत्व						जे.टि.। जे.टि.ए.बाट भएको काम				
५	४	३	२	१	स्थानीय संघ संस्थाहरूसंग मिलेर काम गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरूसंग मिलेर काम गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरुको रीति रिवाजसंग परिचित हुने	५	४	३	२	१
५	४	३	२	१	कृयाकलाप र प्रगति प्रतिवेदन समय समयमा सम्बन्धितकहाँ पेश गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरुको चासको आधारमा प्रसार कार्यक्रम बनाउने	५	४	३	२	१
५	४	३	२	१	प्रसार कार्यक्रम बनाउँदा कृषकहरुको अनुभवको उपयोग गर्ने	५	४	३	२	१
५	४	३	२	१	प्रसार कृयाकलापको लागि अनुशन्धान तथा अन्य प्राविधिक पत्र पत्रिकाहरू उपयोग गर्ने	५	४	३	२	१
५	४	३	२	१	कृषि अनुशन्धान केन्द्र तथा अन्य हातबाट पत्ता लागेका उपयोगी जानकारीहरू प्राप्त गर्ने	५	४	३	२	१
५	४	३	२	१	प्रसार कार्यमा समस्या समाधान मुलक तरिकाहरू प्रयोग गर्ने	५	४	३	२	१
५	४	३	२	१	प्रसार कार्यमा कृषकहरूलाई प्रोत्साहीत गर्ने सिद्धान्तहरू प्रयोग गर्ने	५	४	३	२	१
५	४	३	२	१	प्रसार कृया कलापहरूमा प्रौढ शिक्षाका सिद्धान्त तथा विधिहरू प्रयोग गर्ने	५	४	३	२	१
५	४	३	२	१	स्थानीय गाउं वा पंचायतको प्रोफाइल तयार गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरूलाई आफ्नो पैदावार बेच विखन गर्न संगठित हुन सहयोग गर्ने	५	४	३	२	१
५	४	३	२	१	यी बाहेक अन्य विषय भए उल्लेख गर्नुहोस् :	५	४	३	२	१

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५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कत्तिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कत्तिपनि राम्रो काम भएको छैन

भूमिकाको महत्व	कार्यक्रम कार्यान्वयन सम्बन्धी भूमिका र जिम्मेवारीहरु	जे.टि.। जे.टि.ए. बाट भएको काम
५ ४ ३ २ १	परिदाण र प्रदर्शन संचालनको लागि अगुवा कृषकहरु छान्ने	५ ४ ३ २ १
५ ४ ३ २ १	कृषकहरुमा समस्याहरुको समाधान गर्ने शिप-हरुको विकास गराउने	५ ४ ३ २ १
५ ४ ३ २ १	संस्थागत कृषि ऋण प्राप्त गर्न कृषकहरुलाई सहयोग गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	नर्सरी र विज उत्पादन जस्ता नयां कार्यक्रम-हरु शुरु गर्न कृषकहरुलाई प्रोत्साहित गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	धान, मकै र गहुं जस्ता प्रमुख वालीहरुको उत्पादन बढाउने कार्यक्रम अघि बढाउने	५ ४ ३ २ १
५ ४ ३ २ १	स्थानीय माटो र हावा पानी अनुसार अदुवा, अलैंची, कफि र रैसम खेती जस्ता नयां वाली नालीका कार्यक्रमलाई अघि बढाउने	५ ४ ३ २ १
५ ४ ३ २ १	वाली-नाली उत्पादन, हावापानी, बजार भाउ, र कृषकहरुलाई असर पार्ने अन्य महत्वपूर्ण घटनाहरुको तथ्यांक राख्ने	५ ४ ३ २ १
५ ४ ३ २ १	तरकारीको बिउ, फलफूलका बेनाहरु, कृषि औजारहरु, हांस, कुखुराका चल्लाहरु र माछाका भूराहरु जस्ता वस्तुहरुको माग कृषकहरुबाट संकलन गर्ने र तिनीहरुको पूर्ति गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	कृषि सहायक भएका स्थानहरुमा तिनीहरुको सुपरिवेक्षण गर्ने र निर्देशन दिने	५ ४ ३ २ १
५ ४ ३ २ १	स्थानीय माटो र हावापानीको आधारमा कृषकहरुलाई दिइने सुझावहरुमा हेरफेर गर्ने	५ ४ ३ २ १

५ - धेरै महत्वपूर्ण
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कतिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कतिपनि राम्रो काम भएको छैन

भूमिकाको महत्व						जे.टी.। जे.टि.ए.बाट भएको काम				
५	४	३	२	१	दिएको सुझावहरू कृषकहरूले नअपनाएको कारणहरू पत्ता लगाउने	५	४	३	२	१
५	४	३	२	१	कृषि विकास शाखाले जिम्मा दिएको सम्पूर्ण लक्ष पूरा गर्ने	५	४	३	२	१
५	४	३	२	१	वाली-नाली प्रतियोगिताको आयोजना गर्ने	५	४	३	२	१
५	४	३	२	१	कृषक तालीमको योजना बनाउने र तालीम संचालन गर्ने	५	४	३	२	१
५	४	३	२	१	यी वाहेक अन्य विषय मा उल्लेख गर्नुहोस् :	५	४	३	२	१

शैक्षिक तरिका सम्बन्धी

भूमिका र जिम्मेवारीहरू :

५	४	३	२	१	सरसल्लाह दिन कृषकहरूको घर खेतमा जाने	५	४	३	२	१
५	४	३	२	१	प्रसार कृयाकलापहरू संचालन गर्न पत्र व्यवहार गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरू भेला हुने ठाउँमा सूचना टाँसेर खेती पाती सम्बन्धी जानकारी दिने	५	४	३	२	१
५	४	३	२	१	पंच कार्यकर्ताहरू मार्फत खेती पाती सम्बन्धी जानकारीहरू प्रचार प्रसार गर्ने	५	४	३	२	१
५	४	३	२	१	नियमित रूपमा कृषकहरूसँग विषयगत छलफल गर्न बैठकहरूको आयोजना गर्ने	५	४	३	२	१

५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कतिपति महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ राम्रो काम भएको छैन
१ - कतिपनि राम्रो काम भएको छैन

भूमिकाको महत्व						जे. टि. । जे. टि. ए. बाट भएको काम				
५	४	३	२	१	वाली नालीको प्रदर्शन संचालन गर्ने	५	४	३	२	१
५	४	३	२	१	स्थानिय कृषक दिवस र कृषि प्रदर्शनीको आयोजना गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरुसंग समूह छलफलको आयोजना गर्ने	५	४	३	२	१
५	४	३	२	१	कृषक भ्रमणको आयोजना गर्ने	५	४	३	२	१
५	४	३	२	१	आम संचारको निमित्त पोष्टर र भित्ते पत्रिकाहरुको प्रयोग गर्ने	५	४	३	२	१
५	४	३	२	१	रेडियो नेपालबाट प्रसारण हुने कृषि कार्यक्रम नियमितरुपमा सुन्ने	५	४	३	२	१
५	४	३	२	१	कार्यालयमा अथवा सम्बन्धित ठाउँमा कृषकहरु लाई भेट्ने समय निर्धारण गर्ने	५	४	३	२	१
५	४	३	२	१	प्रसार कार्यको लागि उपयुक्त शैक्षिक सामाग्रीहरु तयार गर्ने	५	४	३	२	१
५	४	३	२	१	प्रसार कार्यक्रम संचालन गर्ने विभिन्न शैक्षिक तरिकाहरुको प्रयोग गर्ने	५	४	३	२	१
५	४	३	२	१	यी बाहेक अन्य विषय भए उल्लेख गर्नुहोस्: _____ _____	५	४	३	२	१

महिला कृषकहरु प्रति
भूमिका र जिम्मेवारीहरु :

५	४	३	२	१	महिला कृषकहरुको आवश्यकता पत्तालगाउने	५	४	३	२	१

५ - धेरै महत्वपूर्ण छ	५ - धेरै राम्रो काम भएको छ
४ - महत्वपूर्ण छ	४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने	३ - केही भन्न नसकिने
२ -- महत्वपूर्ण छैन	२ - राम्रो काम भएको छैन
१ - कतिपनि महत्वपूर्ण छैन	१ - कतिपनि राम्रो काम भएको छैन

भूमिकाको महत्व						जे.टि.। जे.टि.ए. बाट भएको काम				
५	४	३	२	१	महिला कृषकहरुको आवश्यकता अनुरुपको कृषि प्रसार कार्यक्रम लाई प्राथमिकता दिने	५	४	३	२	१
५	४	३	२	१	महिला कृषकहरुको लागि वार्षिक कार्यक्रम तयार गर्ने	५	४	३	२	१
५	४	३	२	१	महिला कृषकहरुको लागि दीर्घकालीन कार्यक्रम तयार गर्ने	५	४	३	२	१
५	४	३	२	१	महिला कृषकहरुसंग सम्पर्क बढाउने	५	४	३	२	१
५	४	३	२	१	महिला कृषकहरुलाई कृषि तथा गृह विज्ञान सम्बन्धी जानकारी दिने	५	४	३	२	१
५	४	३	२	१	कृषकहरुको बैठक, तालिम तथा भ्रमण जस्ता कृयाकलापहरुमा महिला कृषकहरुको सहभागीता बढाउन प्रोत्साहित गर्ने	५	४	३	२	१
५	४	३	२	१	ग्रामीण युवतीहरुलाई ग्रामीण युवा कार्यक्रम हरुमा सहभागीता बढाउन प्रोत्साहित गर्ने	५	४	३	२	१
५	४	३	२	१	महिला कृषकहरुसंग सम्बन्धित कृयाकलापको विवरण पुस्तिका राख्ने	५	४	३	२	१
५	४	३	२	१	यी वाहेक अन्य विषय भए उल्लेख गर्नुहोस् :	५	४	३	२	१
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					- - - - - - - - - - - - - - - - - -					

५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कतिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कतिपनि राम्रो काम भएको छैन

भूमिकाको महत्व	ग्रामीण युवा-युवती प्रति भूमिका र जिम्मेवारीहरु :	जे.टि.। जे.टि.ए.बाट भएको काम
५ ४ ३ २ १	चारपाते क्लबको लागि वार्षिक कार्यक्रम बनाउने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लबको लागि स्वयं सेवकहरु काम्ने र उनीहरुलाई क्लब सम्बन्धी तालिम दिने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लब गठन गर्ने र युवा कृयाकलापलाई प्रोत्साहित गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लबका सदस्यहरुलाई व्यक्तिगत वा सामुहिक आयोजनाहरुमा संलग्न गराउने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लब प्रति अभिभावकहरुको अभिरुचि जगाउने, उनीहरुको सहयोग लिने र क्लबको कृयाकलापहरुमा उनीहरुलाई संलग्न गराउने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लब प्रतियोगीताको आयोजना गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लबका सदस्यहरुलाई आफ्नो काम कर्तव्य सम्बन्धी तालिम दिने	५ ४ ३ २ १
५ ४ ३ २ १	चारपाते क्लब कार्यक्रमको लागि आर्थिक वा अन्य सहयोगहरु जुटाउन सहयोग गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	यी वाहेक अन्य विषय भए उल्लेख गर्नुहोस् : ---------- ----------	५ ४ ३ २ १

५ - धेरै महत्वपूर्ण
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कत्तिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कत्तिपनि राम्रो काम भएको छैन

भूमिकाको महत्व					मूल्याङ्कन सम्बन्धी भूमिका र जिम्मेवारीहरु	जे. टि. । जे. टि. ए. बाट भएको काम				
५	४	३	२	१	वाली नालीको उत्पादन स्थितिको मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	सुख्खा, बाढी, पैह्रो, रोग, किरा तथा अन्य प्राकृतिक प्रकोपबाट भएको वाली नाली क्षतिको मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	कृषि प्रसार कार्यक्रमको प्रभावकारीताको मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	कृषि प्रसार कार्यकर्ताको रुपमा आफ्नो कार्य कुशलताको आफै मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	कृषि सहायक भएको स्थानहरुमा तिनीहरुको कार्य मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	वाली नाली उत्पादन, खाद्यान्नको बजार भाउ र खेतीपाती गर्ने तरिकामा परिवर्तनबाट कृषकहरुमा परेको प्रभावको मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	कृषि प्रसार सम्बन्धी कुनै पनि कृयाकलापको नतिजाको मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरुलाई सरसल्लाह दिंदा अनुसन्धानबाट पत्ता लागेको कुराहरुको उपयोग गर्ने	५	४	३	२	१
५	४	३	२	१	थप अनुसन्धान गर्नु पर्ने समस्याहरुको ज्ञानविन गर्ने	५	४	३	२	१
५	४	३	२	१	अनुसन्धानबाट पत्ता लागेका कुराहरुको अध्यावधिक जानकारी राख्ने	५	४	३	२	१
५	४	३	२	१	चारपाते क्लबका सदस्यहरुको प्रगति र विकासको मूल्याङ्कन गर्ने	५	४	३	२	१
५	४	३	२	१	कृषकहरुको समस्या र आवश्यकताहरुको लेखाजोखा गर्ने	५	४	३	२	१

५ - धेरै महत्वपूर्ण छ
४ - महत्वपूर्ण छ
३ - केही भन्न नसकिने
२ - महत्वपूर्ण छैन
१ - कतिपनि महत्वपूर्ण छैन

५ - धेरै राम्रो काम भएको छ
४ - राम्रो काम भएको छ
३ - केही भन्न नसकिने
२ - राम्रो काम भएको छैन
१ - कतिपनि राम्रो काम भएको छैन

भूमिकाको महत्व		जे.टि.। जे.टि.ए. बाट भएको काम
५ ४ ३ २ १	कार्यलक्ष उपलब्धीहरुको गुणात्मक मूल्यांकन गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	कार्यलक्ष उपलब्धीहरुको संख्यात्मक मूल्यांकन गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	उपलब्धीहरुको प्रभावको लेखाजोखा गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	यी बाहेक अन्य विषय भए उल्लेख गर्नुहोस् : ---------- ----------	५ ४ ३ २ १
	पेशागत विकास सम्बन्धी भूमिकाहरु :	
५ ४ ३ २ १	पेशागत संलग्नताको अवसरहरुको पहिचान गर्ने	५ ४ ३ २ १
५ ४ ३ २ १	पेशागत विकासको लागि योजना बनाउने	५ ४ ३ २ १
५ ४ ३ २ १	सेवाकालीन तालिमहरुबाट पेशागत निपुणता बढाउने	५ ४ ३ २ १
५ ४ ३ २ १	पेशागत आदर्शहरु कायम राख्ने	५ ४ ३ २ १
५ ४ ३ २ १	पेशागत कृयाकलापहरुमा भाग लिने	५ ४ ३ २ १
५ ४ ३ २ १	कृषि विकास शाखामा हुने बैठकमा नियमित रुपले भाग लिने	५ ४ ३ २ १
५ ४ ३ २ १	यी बाहेक अन्य विषय भए उल्लेख गर्नुहोस् : ---------- ----------	५ ४ ३ २ १

जे. टि. । जे. टि. ए. हरुले गर्नु पर्ने खास-खास काम कर्तव्यको उल्लेख गरेर तिनीहरुको प्रभावकारिता बढाउने यस प्रश्नावलीको उद्देश्य रहेको छ । उनीहरुको काम कर्तव्य उल्लेख गर्न उपयोगी हुने अन्य कुनै कुरा यस टिका टिप्पणी गर्नुहोस् :

- - - -

Code ....
Date ......

Roles of field level agricultural extension workers in Nepal as perceived by agricultural extension personnel

Instructions: Please read each of the following items and indicate your perception twice for each item. Indicate your perception for the importance of each item as a task of JTAs in the left column and as to how well each task is performed by JTAs in the right column. The scale for each column is described below. Please circle the appropriate number in the scale that best indicates your perception.

Scale for perceived importance of each item as a task of JTAs:	Scale for perceived performance of each task by JTAs:
5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

Following is an example of how you are to mark your answer:

5 4 3 2 1	Participate in regional conferences	5 4 3 2 1

PART I

PROGRAM DETERMINATION ROLE

Importance of tasks		Performance of tasks
5 4 3 2 1	Determine extension program needs of farmers	5 4 3 2 1
5 4 3 2 1	Establish program priorities	5 4 3 2 1
5 4 3 2 1	Assist ADO in budget preparation	5 4 3 2 1
5 4 3 2 1	Develop a calendar of operation	5 4 3 2 1
5 4 3 2 1	Prepare an annual plan of work	5 4 3 2 1

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

Importance of tasks		Performance of tasks
5 4 3 2 1	Prepare a long-range plan of work	5 4 3 2 1
5 4 3 2 1	Involve community agencies in program planning	5 4 3 2 1
Any additional task:		
5 4 3 2 1	.....	5 4 3 2 1
	.....	

PROGRAM STRATEGY ROLE

5 4 3 2 1	Utilize a calendar of events	5 4 3 2 1
5 4 3 2 1	Provide technical information to farmers upon their request	5 4 3 2 1
5 4 3 2 1	Provide technical information on their own initiatives	5 4 3 2 1
5 4 3 2 1	Consult with ADO/SMS on program direction	5 4 3 2 1
5 4 3 2 1	Become acquainted with influentials in the area	5 4 3 2 1
5 4 3 2 1	Develop working relationships with community agencies	5 4 3 2 1
5 4 3 2 1	Develop a working relationship with farmers	5 4 3 2 1
5 4 3 2 1	Recognize customs and traditions of farmers	5 4 3 2 1
5 4 3 2 1	Report activities and progress periodically to the supervisor	5 4 3 2 1
5 4 3 2 1	Use farmers' interest in developing extension programs	5 4 3 2 1

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

Importance of tasks		Performance of tasks
5 4 3 2 1	Use farmers' experience in developing extension programs	5 4 3 2 1
5 4 3 2 1	Use research and technical literature in extension activities	5 4 3 2 1
5 4 3 2 1	Secure sound research information from experiment stations and other sources	5 4 3 2 1
5 4 3 2 1	Use problem solving approach in extension work	5 4 3 2 1
5 4 3 2 1	Use principles of motivation in extension work	5 4 3 2 1
5 4 3 2 1	Use principles and procedures of teaching adults in extension activities	5 4 3 2 1
5 4 3 2 1	Prepare Village Panchayat profile	5 4 3 2 1
5 4 3 2 1	Assist farmers to organize themselves for marketing their farm produces	5 4 3 2 1
Any additional task:		
5 4 3 2 1	.....	5 4 3 2 1
	.....	

PROGRAM IMPLEMENTATION ROLE

5 4 3 2 1	Select progressive farmers to conduct trials and demonstrations	5 4 3 2 1
5 4 3 2 1	Help develop farmers' problem solving skills	5 4 3 2 1
5 4 3 2 1	Help farmers get farm credit	5 4 3 2 1
5 4 3 2 1	Encourage farmers to develop new programs such as nurseries and	5 4 3 2 1

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

Importance of tasks		Performance of tasks
	seed production	
5 4 3 2 1	Promote programs to increase production in such major crops as rice, maize and wheat	5 4 3 2 1
5 4 3 2 1	Promote new crops such as ginger, cardamom, coffee and silkworms where agro-climatic conditions are favorable	5 4 3 2 1
5 4 3 2 1	Maintain records for crop production weather, market price and other important events that affect farmers	5 4 3 2 1
5 4 3 2 1	Identify need for such farm inputs as vegetable seeds, fruit seedlings, farm tools, chicken, ducklings, and fishlings and supply them at cost	5 4 3 2 1
5 4 3 2 1	Supervise and guide Agricultural Assistants where applicable	5 4 3 2 1
5 4 3 2 1	Modify recommendations according to local agro-climatic conditions	5 4 3 2 1
5 4 3 2 1	Determine causes for non-compliance with recommendations	5 4 3 2 1
5 4 3 2 1	Accomplish overall goals set by the ADOs	5 4 3 2 1
5 4 3 2 1	Organize crop competition	5 4 3 2 1
5 4 3 2 1	Plan and conduct trainings for farmers	5 4 3 2 1
Any additional task:		
5 4 3 2 1	....	5 4 3 2 1

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

EDUCATION ROLE

Importance of tasks		Performance of tasks
5 4 3 2 1	Make farm visits to advise farmers	5 4 3 2 1
5 4 3 2 1	Use circular letters in conducting extension activities	5 4 3 2 1
5 4 3 2 1	Post notices in common places to communicate farmers	5 4 3 2 1
5 4 3 2 1	Disseminate message through Panch leaders	5 4 3 2 1
5 4 3 2 1	Hold regularly scheduled subject matter meetings with farmers	5 4 3 2 1
5 4 3 2 1	Conduct demonstrations	5 4 3 2 1
5 4 3 2 1	Organize field days and exhibitions	5 4 3 2 1
5 4 3 2 1	Conduct group discussions with farmers	5 4 3 2 1
5 4 3 2 1	Organize farmers' tours and field trips	5 4 3 2 1
5 4 3 2 1	Use posters, wall charts for mass communication.	5 4 3 2 1
5 4 3 2 1	Regularly listen to radio agricultural programs	5 4 3 2 1
5 4 3 2 1	Set office hours for farmers	5 4 3 2 1
5 4 3 2 1	Prepare appropriate teaching materials for extension work	5 4 3 2 1
5 4 3 2 1	Use several teaching methods in conducting extension programs	5 4 3 2 1

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

Importance of tasks		Performance of tasks
Any additional task:		
5 4 3 2 1	.....	5 4 3 2 1
	.....	

SPECIAL PROGRAMS FOR FEMALE FARMERS ROLE

5 4 3 2 1	Recognize needs of female farmers	5 4 3 2 1
5 4 3 2 1	Establish program priorities geared to the needs of female farmers	5 4 3 2 1
5 4 3 2 1	Prepare an annual plan of work for female farmers	5 4 3 2 1
5 4 3 2 1	Prepare a long range plan of work for female farmers	5 4 3 2 1
5 4 3 2 1	Become acquainted with female farmers	5 4 3 2 1
5 4 3 2 1	Provide agricultural and home economic information to female farmers	5 4 3 2 1
5 4 3 2 1	Encourage and involve female farmers in such activities as farmers meeting, farmers' training and field trips	5 4 3 2 1
5 4 3 2 1.	Encourage and involve young women in rural youth programs	5 4 3 2 1
5 4 3 2 1	Maintain a log for activities for female farmers	5 4 3 2 1

Any additional task:

5 4 3 2 1	.....	5 4 3 2 1
	.....	

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

SPECIAL PROGRAMS FOR RURAL YOUTHS ROLE

Importance of tasks		Performance of tasks
5 4 3 2 1	Develop a 4-H annual plan of work	5 4 3 2 1
5 4 3 2 1	Recruit and train volunteer 4-H leaders	5 4 3 2 1
5 4 3 2 1	Organize 4-H clubs and encourage youth activities	5 4 3 2 1
5 4 3 2 1	Involve 4-H members in agricultural related projects	5 4 3 2 1
5 4 3 2 1	Obtain parental interest, cooperation and involvement in 4-H activities	5 4 3 2 1
5 4 3 2 1	Organize 4-H contests	5 4 3 2 1
5 4 3 2 1	Provide officer training for 4-H officers	5 4 3 2 1
5 4 3 2 1	Assist in solicit contributions for	5 4 3 2 1
Any additional task:		
5 4 3 2 1	.....	5 4 3 2 1
	.....	

EVALUATION ROLE

5 4 3 2 1	Evaluate the crop production situation	5 4 3 2 1
5 4 3 2 1	Evaluate the crop loss due to drought flooding, disease and insect infestation and other natural calamities	5 4 3 2 1
5 4 3 2 1	Evaluate the effectiveness of extension programs	5 4 3 2 1

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

Importance of tasks		Performance of tasks
5 4 3 2 1	Evaluate one's own performance as an extension worker	5 4 3 2 1
5 4 3 2 1	Evaluate the performance of AAs where applicable	5 4 3 2 1
5 4 3 2 1	Evaluate the impact on farmers due to change in farm productions, market price and farming techniques	5 4 3 2 1
5 4 3 2 1	Evaluate results of an extension events or activity	5 4 3 2 1
5 4 3 2 1	Apply research findings when making recommendations to farmers	5 4 3 2 1
5 4 3 2 1	Identify problems requiring additional research	5 4 3 2 1
5 4 3 2 1	Keep up-to-date with research findings	5 4 3 2 1
5 4 3 2 1	Evaluate progress and development of 4-H members	5 4 3 2 1
5 4 3 2 1	Assess farmers' problems and needs	5 4 3 2 1
5 4 3 2 1	Make qualitative assessment of overall accomplishments	5 4 3 2 1
5 4 3 2 1	Make quantitative assessment of overall accomplishments	5 4 3 2 1
5 4 3 2 1	Interpret the implications of the accomplishments	5 4 3 2 1

Any additional task:

5 4 3 2 1	.....	5 4 3 2 1
	.....	

5 = Very important	5 = performed very well
4 = Important	4 = Performed well
3 = Undecided	3 = Undecided
2 = Unimportant	2 = Performed poorly
1 = Very unimportant	1 = Performed very poorly

PROFESSIONAL DEVELOPMENT ROLE

Importance of tasks		Performance of tasks
5 4 3 2 1	Identify opportunities for professional involvement	5 4 3 2 1
5 4 3 2 1	Develop a plan for professional development	5 4 3 2 1
5 4 3 2 1	Maintain professional competency inservice	5 4 3 2 1
5 4 3 2 1	Maintain a professional philosophy	5 4 3 2 1
5 4 3 2 1	Participate in professional activities	5 4 3 2 1
5 4 3 2 1	Attend meeting regularly at ADO office	5 4 3 2 1

Any additional task:

5 4 3 2 1 ..... 5 4 3 2 1
.....

Comments: The purpose of this questionnaire is to specify the roles and responsibilities of JTs/JTAs in order to increase their effectiveness. Please make any additional comments that you think would be useful in specifying their roles and responsibilities.

.....

.....

.....

.....

.....

.....

PART II

Please complete the following questions either by filling in or by checking the appropriate blank:

1. Your present position .....

2. Length of service: ..... years.

3. Number of years in your present position: .....years

4. Your date of birth: .../.../...

5. Your gender: male/ female

6. Your highest earned education (check only one):

Education

..... High School

..... One year JTA training after high school

..... ISc (Ag)

..... BSc (Ag)

..... MSc (Ag)/ or higher

7. Name of the district ..... and developmental region ..... you are currently serving

8. Name of your home district .....

Please recheck to see that you have responded to all items. Thank you for your time in responding to the above items.

INFORMATION ON THE USE OF HUMAN SUBJECTS IN RESEARCH
IOWA STATE UNIVERSITY
(Please follow the accompanying instructions for completing this form.)

1. Title of project (please type): Perceptions of Professional Roles and Responsibilities of Junior Technical Assistants of Nepal

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

Narayan Kunwar	6/23/88	x [signature]
Typed Named of Principal Investigator	Date	Signature of Principal Investigator

223 Curtiss Hall	294-0241
Campus Address	Campus Telephone

3. Signatures of others (if any)

[signature]	6/23/88	Major Professor
Signatures of others (if any)	Date	Relationship to Principal Investigator

4. ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, and (D) covering any topics checked below. CHECK all boxes applicable. (See attached)

- ☐ Medical clearance necessary before subjects can participate
- ☐ Samples (blood, tissue, etc.) from subjects
- ☐ Administration of substances (foods, drugs, etc.) to subjects
- ☐ Physical exercise or conditioning for subjects
- ☐ Deception of subjects
- ☐ Subjects under 14 years of age and(or) ☐ Subjects 14-17 years of age
- ☐ Subjects in institutions
- ☐ Research must be approved by another institution or agency

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5. ATTACH an example of the material to be used to obtain informed consent and CHECK which type will be used.

- ☐ Signed informed consent will be obtained.
- ☒ Modified informed consent will be obtained.

6. Anticipated date on which subjects will be first contacted: Month 8 Day 1 Year 88

Anticipated date for last contact with subjects: 12 1 88

7. If Applicable: Anticipated date on which audio or visual tapes will be erased and(or) identifiers will be removed from completed survey instruments: 6 (Month) 1 (Day) 89 (Year)

[signature]	6/27/88	Agricultural Education
Signature of Head or Chairperson	Date	Department or Administrative Unit

9. Decision of the University Committee on the Use of Human Subjects in Research:

☒ Project Approved ☐ Project not approved ☐ No action required

George G. Karas	7/7/88	[signature]
Name of Committee Chairperson	Date	Signature of Committee Chairperson